

917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

REMEDIATION PROGRESS REPORT Second Quarter 2014

Phillips 66 Facility No. 255353 600 Westlake Avenue North Seattle, Washington 98107

Submitted to: Ed Ralston Phillips 66 Company Remediation Management 76 Broadway Sacramento, California 95818

Submitted by: Cardno 917 1st Avenue North, Suite 3 Billings, Montana 59101

Cardno ATC Job No. 76.75118.1396

August 22, 2014

Kyle Sattler Senior Project Manager

Keith Fox Senior Project Engineer



Cardno ATC Contact Person:	Kyle Sattler, Senior Project Manager
Department of Ecology Facility ID:	46445373
LUST Facility No.:	8463
Voluntary Cleanup Program No.	NW1714
Current Remediation Techniques:	Soil vapor extraction (SVE) and air sparging (AS)
Reporting Period:	4/1/14 through 6/30/14

REMEDIATION SYSTEM, UTILITIES, & PERMITS

Remediation Equipment:	SVE: I wo Sutorbilt 10-HP blowers. AS: One Rietschle 10- HP compressor.
Utilities In Use:	Electrical Service, Seattle City Light, Meter # 849179
PSCAA Permit:	Registration No. 29548
KCIW Permit:	Discharge Authorization No. 4262-01

SVE SYSTEM OPERATIONAL DATA

Mercer-Westlake (Blower #B-701)		Terry-Valley (Blower #B-801)	
Hours Operated This Period:	1,810.5	Hours Operated This Period:	1,833.5
Percent Runtime This Period:	82.9%	Percent Runtime This Period:	83.9%
Cumulative Operating Hours:	3866.5	Cumulative Operating Hours:	3,889.5
Cumulative Percent Runtime:	86.6%	Cumulative Percent Runtime:	87.1%

AS SYSTEM OPERATIONAL DATA

Hours Operated This Period:	2,029.5
Percent Runtime This Period:	92.9%
Cumulative Operating Hours:	4,083.5
Cumulative Percent Runtime:	91.5%

ESTIMATED REMOVAL RATES

TPHg Removed This Period:		969.35 pounds	
TPHg Removal Rate This Period:		0.57 pounds per hour, average for the p	eriod
TPHg Removal Rate Previous Period:		0.69 pounds per hour, average for the p	eriod
Cumulative TPHg Removed:		2,655.77 pounds	
Benzene Removed This Period:	0.37 pounds	Ethylbenzene Removed This Period:	6.99 pounds
Cumulative Benzene Removed:	1.62 pounds	Cumulative Ethylbenzene Removed:	21.54 pounds
Toluene Removed This Period:	5.87 pounds	Xylenes Removed Rate This Period:	88.54 pounds
Cumulative Toluene Removed:	16.24 pounds	Cumulative Xylenes Removed:	200.37 pounds

Comments:

The (SVE) system consists of two blowers that extract soil vapors from a total of 36 vertical wells (19 in Mercer Street, 17 in Terry Avenue) and 16 horizontal wells (7 in Valley Street, 9 in Westlake Avenue). The locations of the SVE and AS wells are shown on Figure 1. The AS system supplies compressed air to a total of 62 air sparge wells (27 in Mercer Street, 14 in Valley Street, 21 in Westlake Avenue). The SVE blowers discharge vapors to an off-gas treatment system that uses GAC to reduce air emissions to permitted levels. Water from SVE moisture separators is also treated with GAC before discharging to the King County sewer system. The system layout is shown on Figure 2.

System start-up was completed on December 27, 2013. The Mercer-Westlake SVE blower went offline on April 29 due to high blower outlet temperature. The alarm set point was adjusted to compensate, but remains below the temperature limit of the PVC pipe. The Mercer-Westlake SVE blower was brought back on line on April 30. The entire system went offline on May 26 due to operator error resulting in a SVE knock-out water transfer pump being shut off. The error was corrected and the system was brought back on line on May 27. The entire system was taken offline on April 4 and June 25 following 10% breakthrough detected in the primary vapor carbon vessels. The system was brought back on line on April 11 and July 1, respectively.



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Compliance samples per a PSCAA permit (Authorization #4262-01, Expiration: 6/30/2018) were collected on April 16, May 8, and June 25. Laboratory analytical reports are included in Appendix A, and results are summarized in Table 1. Sample port locations are shown on Figure 2. Total petroleum hydrocarbon (TPH) concentrations at the inlets to the GAC vessels are below the permit threshold of 200 ppmv, above which control efficiency of 97% must be demonstrated. Carbon in the three primary off-gas treatment vessels was replaced on April 11. Documentation for the 3,000 pounds of spent GAC removed during the April change out is included in Appendix B. Prior to the carbon change, the primary vessels showed breakthrough exceeding 10% of the influent concentration, but less than 10 ppmv, the higher limit set by the PSCAA permit. The carbon change out related to the June 25 breakthrough was completed in July and will be documented in the third quarter remediation progress report. In June, Cardno began discussion with PSCAA regarding modifications to the permit aimed at reducing the frequency of discharge compliance monitoring and setting the limits at which the treatment system can be turned off.

Compliance samples per the KCIW permit (Registration #429548) were collected on April 16, May 8, and June 25. Laboratory analytical reports are included in Appendix A, and results are summarized in Table 2. Sample port locations are shown on Figure 2. All samples demonstrated compliance with permit limits. BTEX results were below detection limits, with the exception of total xylenes detected in the influent sample collected on April 16, 2014. A total of 5,718 gallons of treated water were discharged to the King County sewer system during the period.

Steps taken to optimize the system during the period included varying the on-time of the AS wells and experimenting with assigning AS wells to different zones to maximize flow around SVE wells with measurable concentrations. Certain SVE wells were also shut down in an attempt to maximize vacuum to SVE wells with measurable concentrations. The adjustments did not produce measurable effects, i.e. vapor concentrations did not change significantly, and the system was eventually returned to a basic configuration with maximum vacuum applied at the SVE blowers (80" water +/- 5") and sparge intervals of 15 minutes at all AS wells. Select low-concentration SVE wells remain closed to maintain the vacuum on wells with higher vapor concentrations. The average calculated removal rate for the period was 0.57 pounds TPHg per hour, a 17% decrease compared to the rate from the previous period; total estimated TPHg removal was 969.35 pounds.

Recommendations:

Cardno recommends continued optimization through adjustments to the system, such as:

- Qualitative evaluation of maximizing system flows while the water table is low vs. continued extraction of lowconcentration vapors.
- Evaluate improved extraction rates/efficiency through pulsing, or alternating, segments that are online.
- Collect pre-adjustment and post-adjustment PID data to gauge optimization success.



Shaping the Future

Table 1: Vapor Phase Analytical Results Summary

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Sampla	Somplo	Sample Work		Analytical Vap	or Results (EPA	Method TO-15 for VO	DCs)(µg/m3)	
Location	Date	Order No.	THCg	Benzene	Toluene	Ethylbenzene	m&p Xylenes	o- Xylenes
V1 Influent			156,000	119	2,050	1,430	9,170	3,630.0
V1 Intermediate	04/16/14	10263855	ND<1220	ND<6.5	32	ND<17.6	ND<35.2	ND<17.6
V1 Effluent			ND<1220	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V1 Influent			107,000	28	483	745	7,240	2,720.0
V1 Intermediate	05/08/14	10266625	4,120	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V1 Effluent			5,110	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V1 Influent			55,200	ND<76	309	277	5,840	2,280
V1 Intermediate	06/25/14	10272237	9,600	19.3	231	148	773	38
V1 Effluent			ND<2040	20.6	36.5	ND<29.6	ND<59.1	ND<29.6
V2 Influent			162,000	85	1,420	988	5,510	2,530
V2 Intermediate	04/16/14	10263855	ND<1220	ND<6.5	22.9	ND<17.6	ND<35.2	ND<17.6
V2 Effluent			ND<1220	ND<6.5	30.3	ND<17.6	ND<35.2	ND<17.6
V2 Influent			103,000	ND<16.2	435	711	8,340	2,660.0
V2 Intermediate	05/08/14	10266625	3,310	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V2 Effluent			5,620	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V2 Influent			23,200	ND<73.4	ND<174	ND<199	2,820	1,070
V2 Intermediate	06/25/14	10272237	12,900	19.4	143	34	ND<61.2	ND<30.6
V2 Effluent			ND<2040	12	ND<25.9	ND<29.6	ND<59.1	ND<29.6
V3 Influent			167,000	78	1,320	882	6,860	2,290
V3 Intermediate	04/16/14	10263855	ND<1220	ND<6.5	18	ND<17.6	ND<35.2	ND<17.6
V3 Effluent			ND<1220	ND<6.5	30.8	ND<17.6	ND<35.2	ND<17.6
V3 Influent			134,000	33	641	1,060	11,600	3,690.0
V3 Intermediate	05/08/14	10266625	9,300	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V3 Effluent			3,970	ND<6.5	ND<15.4	ND<17.6	ND<35.2	ND<17.6
V3 Influent			ND<28400	ND<152	ND<360	ND<412	3,140	1,130
V3 Intermediate	06/25/14	10272237	19,100	24.5	188	130	944	207
V3 Effluent			ND<2120	ND<11.3	ND<26.8	ND<30.6	ND<61.2	ND<30.6

Notes:

There are three sets (or trains) of two vapor phase carbon units (for a total of six) used to treat extracted vapors. The two carbon units associated with each train are plumbed in series. Samples V1 Influent, V1 Intermediate, and V1 Effluent were collected from sample ports associated with the first train of vapor phase carbon units. Samples V2 Influent, V2 Intermediate, and V2 Effluent were collected from sample ports associated with the first train of vapor phase carbon units. Samples V3 Influent, V3 Intermediate, and V3 Effluent were collected from sample ports associated with the third train of vapor phase carbon units. The influent sample ports for each train are located prior to the first carbon units. The intermediate sample ports for each train are located after the second (and last) carbon units. The sample port locations are shown on Figure 2.



Shaping the Future

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Table 2: Liquid Phase Analytical Results Summary

Sample Location	Sample Date	Work Order No.	Analytical	Water Results	s (NWTPH-Gx 8260 for V (µg/L)	/8021 for THCg and OCs)	EPA Method
			THCg	Benzene	Toluene	Ethylbenzene	Total Xylenes
W-DSCHG	04/16/14	10264021	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-OUT-WC1	04/16/14	10264021	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-INF-WS1	04/16/14	10264021	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	5.5
W-DSCHG	05/08/14	10266764	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-OUT-WC1	05/08/14	10266764	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-INF-WS1	05/08/14	10266764	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-DSCHG	06/25/14	10272335	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-OUT-WC1	06/25/14	10272335	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)
W-INF-WS1	06/25/14	10272335	ND (<100)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<3.0)

Notes:

There are a total of two liquid phase carbon units plumbed in series to treat water. Samples W-INF and W-INF-WS1 were collected from a sample port located prior to the first liquid phase carbon unit. Samples W-INT and W-OUT-WC1 were collected from a sample port located between the first and second liquid phase carbon units. Samples W-DSCHG were collected from the sample port located after the second (and final) liquid phase carbon unit. The sample port locations are shown on Figure 2.



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ATTACHMENTS Acronym List Figure I – Site Layout Diagram Figure 2 – Remediation System Layout Remediation System Operational Data Summary Cumulative TPHg and BTEX Removal Graph SVE PID Data Summary AS Flow Data Summary O&M Log Field Notes Appendix A- Laboratory Analytical Reports and Chain of Custody Documents Appendix B- Carbon Change Documentation

NOTES:

1. LOCATIONS OF SITE FEATURES CONSTRUCTED FOR THE P-66 REMEDIATION SYSTEM (REMEDIATION COMPOUND, **ON-SITE TRENCHES, TERRY AVE. TRENCH** EXTENSION) HAVE NOT BEEN SURVEYED AND ARE APPROXIMATE.

2. LOCATIONS OF ALL OTHER SITE AND AREA FEATURES ARE BASED ON PLANS SUPPLIED BY SDOT, AND HAVE NOT BEEN VERIFIED BY THE PROJECT ENGINEER.





EXPLANA	TION:
~~~~	SHEET PILE LOCATION
	GRAVITY WALL LOCAT



# **Remediation System Operational Data Summary** PHILLIPS 66 FACILITY #255353

				SVE S	ystem									Off-gas	Treatment	System						
		Mercer-We	estlake Wells			Valley-Te	erry Wells		AS Sy	stem		VPC-1			VPC-2			VPC-3		9	System Tota	als
				Pre-				Pre-													Estimated	
				dilution				dilution					Estimated			Estimated			Estimated	Estimated	TPHg	Cumulative
	Period	Wells On-	Applied	Discharge	Period	Wells On-	Applied	Discharge	Period	Applied	Flow	Influent	TPHg	Flow	Influent	TPHg	Flow	Influent	TPHg	TPHg	Removal	TPHg
	Operating	line	Vaccum	Conc.	Operating	line	Vaccum	Conc.	Operating	Pressure	Rate	Conc.	Removed	Rate	Conc.	Removed	Rate	Conc.	Removed	Removed	Rate	Removed
Date	Hours	(count)	(in. H ₂ O)	(ppm)	Hours	(count)	(in. $H_2O$ )	(ppm)	Hours	(psi)	(scfm)	(µg/m ³ )	(lbs.)	(scfm)	(µg/m ³ )	(lbs.)	(scfm)	(µg/m ³ )	(lbs.)	(lbs.)	(lbs./hr)	(lbs.)
4/1/14	104	10	72	27.1	104	22	74	22.1	104	15.1	200.25		52.51	120 02		60.26	469 17		71.10	101.97	0.00	1696 /1
4/1/14	71	19	73	17.0	70	25	74	15.0	71	15.1	399.23		20.01	420.93		25.97	400.17		27.61	101.07	0.99	1060.41
4/11/14	118	21	72	38.2	110	25	73	10.5	118	12.4	406.84	156000	28.05	470.13	162000	17 30	501.60	167000	27.01	137.05	0.00	2001.59
4/10/14	168	22	62	J0.2	168	20	74	20	168	12.5	406.20	130000	39.88	450.74	102000	47.53	482 21	107000	50.67	133.31	0.02	2134.90
4/30/14	146	20	73	48.3	169	28	73	18.2	170	12.0	406.20		34.65	464.92		25.78	482 21		50.07	86.10	0.02	2221.00
5/8/14	190	25	73	36	190	29	75	8	190	13	336.33	107000	25.61	351 75	103000	13.16	363.86	134000	34 70	43.93	0.43	2264.93
5/12/14	102	26	73	37	102	30	74	7.9	102	13.4	319.88		13.08	334.30	100000	30.11	345.68	101000	17.70	100.37	0.43	2365.30
5/22/14	235	27	74	39.1	234	31	74	6.6	234	12.5	318.18		29.97	333.56		13.11	343.06		40.29	44.30	0.44	2409.60
5/27/14	100	28	76	30.7	101	32	75	6	100	12.7	325.05		13.03	336.54		24.42	358.27		18.16	78.63	0.47	2488.24
6/3/14	168	29	77	32	168	33	68	5.5	169	13.3	333.45		22.45	376.74		23.82	376.67		31.76	76.13	0.46	2564.37
6/10/14	166	30	79	29.4	166	34	82	5.4	165	13.8	321.35		21.38	371.88		18.71	371.30		30.94	62.56	0.44	2626.93
6/16/14	144	31	80	30.4	143	35	85	7.2	144	12.7	323.85		18.69	339.19		6.48	350.53		25.16	28.57	0.13	2655.50
6/25/14	213	32	78	NM	214	36	85	NM	214	10.7	316.85	55200	13.95	348.40	23200	0.06	357.32	28400	8.13	0.27	0.13	2655.77

### Notes:

SVE Soil Vapor Extraction = in.  $H_2O =$ inches of water ppm

Air Sparge =

pounds per square inch micrograms per cubic meter VPC = Vapor Phase Carbon

scfm = standard cubic feet per minute

TPHg =

Total Petroleum Hydrocarbons (Gasoline)

- =

AS

psi

(µg/m³)

=

=

parts per million



# SVE PID Data Summary PHILLIPS 66 FACILITY #255353

Date			Wes	tlake SVE \	Nells - PID	Readings (	opm)		
	WC1	WC2	WC3	WB3	WB2	WB1	WA3	WA2	WA1
4/16/2014	69	225	210	135	32	225	64	210	115
6/3/2014									

Date	Mercer SVE Wells - PID Readings (ppm)																		
	M6	M7	M10	M9	M8	M1	M2	M3	M4	M5	M14	M13	M15	M12	M11	M16	M17	M18	M19
4/16/2014		0.4	0.1	2.6	49.3	1.6	0.3	0.2	0.1	0.1	1.1	0.1	0.1	0.1	183	8.3	154	118	8.5
6/3/2014	0.1	0	0.2	0.8	8	0	0	0.1	0.1		1.1	0	0	0.1	124	12.5	74.5	31	0.8

Date						Te	rry SVE W	ells - PID R	eadings (pp	om)					
		TEFR1         TMW65         TSVE11-         TSVE10-         TSVE12-         TEFR2         TMV												TMW48	
	TSVE3	AIR	AIR	TSVE4	MW67	MW66	TSVE2	TSVE1	TSVE7	MW68	TSVE5	TSVE6	AIR	TSVE8	AIR
4/16/2014	3.2	1.5	0.8	0.2	2.5	45	1.8	1	0.2	0.3	0.2	0.1	0	0.1	16.1
6/3/2014	0.8	0.5	0.3	0.2	0.6	30.7	1.3	0.4	0.1	0.1	0	0	0.1	0	0.3

Date			Valley S	VE Wells -	PID Readin	gs (ppm)		
	V9	V7	V1	V6	V2	V5	V3	V4
4/16/2014	0.1	0.1	0.1	0.1		81.1		0.1
6/3/2014	0	0	0.1	0	0	22.8		0.1

Notes:

SVE =

Soil Vapor Extraction Photo Ionization Detector PID =

parts per million ppm =

Not Measured/Offline = ---

### AS Flow Data Summary PHILLIPS 66 FACILITY #255353

Date									Westla	ke AS Wells	s - Flow Rat	te Readings	s (scfm)								
	W-1	W-2	W-3	W-4	W-5	W-6	W-7	W-8	W-9	W-10	W-11	W-12	W-13	W-14	W-15	W-16	W-17	W-21	W-20	W-19	W-18
5/27/2014																					

Date													Merce	r AS Wells	- Flow Rate	Readings	(scfm)											
	M-	-8	M-20	M-26	M-2	M-27	M-16	M-3	M-9	M-17	M-5	M-19	M-15	M-7	M-10	M-14	M-18	M-6	M-13	M-4	M-22	M-12	M-1	M-23	M-11	M-25	M-24	M-21
5/27/20	)14 14	4	25	0	0	0	6.5	7	7	10	15	6.5	8	7	25	25	0	16	5	11	11.5	6	16	1	1	25	9	0

Date						Valley AS \	Vells - Flow	Rate Read	dings (scfm)	)				
	V-6	V-7	V-8	V-9	V-10	V-5	V-11	V-4	V-12	V-3	V-13	V-2	V-14	V-1
5/27/2014	1	18	5	3	8	0	17	2	3	8	8	12	0	6

Notes:

 Air Sparge
 Standard Cubic Feet per Minute
 Not Measured/Offline AS SCFM = =

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# Operation and Maintenance Log Field Notes PHILLIPS 66 FACILITY #255353

Date	Time	Name	Comments
			System operational upon arrival/departure. 801 reduced to 50% (now both 701 & 801 are @ 50%). Breakthrough has
4/1/14	12:00 PM	NAG	reached over 10% in carbon trains 1 & 3.
4/4/14	10:00 AM	EJB	System operational upon arrival, system LOTO upon departure. System shut down for carbon replacement.
			System LOTO upon arrival. The tops were removed from the 3 primary carbon vessels. Evoqua changed out carbon
			and also removed the 4,000lbs. of carbon from the last changeout from the site. Upon Evoqua's departure, the tops
4/11/14	1:00 PM	NAG	were reinstalled and the system was restarted. The system was operational upon departure.
			System operational upon arrival/departure. Sparge readings were taken. PID readings were taken. Monthly vapor
4/16/14	11:15 AM	EJB	samples were collected, and water samples were collected (NO FOG SAMPLES COLLECTED).
			System operational upon arrival/departure. Sparge readings were taken. Oil topped off in B-801 and B-701. Vac
4/23/14	11:00 AM	EJB	gauges on blower intakes need to be replaced.
			701 blower down upon arrival for high blower outlet temp. Alarm setpoint was set at 120°F. The limiting factor for
			temperature extremes was the sched80 PVC, which has an upper limit of 140°F, which is what both the 701 & 801
			alarm setopints were set to System was operational upon departure NOTE: Anemometer was not functioning
4/30/14	12.30 PM	NAG	pronerly for flow measurements
4/30/14	12.301 10	INAO	System operational upon arrival/departure. Vac gauges on blower intakes need to be replaced. Monthly vapor
			samples and water samples were collected. (Including EOC samples) NOTE: Popted anomemeter was used for this
5/0/1/	10.45 AM		vieit
5/6/14	10.45 AM	EJD	Visit. System operational upon arrival/departure. Vac gauges on blower intekes need to be replaced. NOTE: Pented
5/12/14			opporter was used for this visit
3/12/14	4.30 F M	LJD	System operational upon arrival/departure, Polts on P 701 and P 901 were tightened. Photos were taken of potential
			System operational upon anival/departure. Beits on B-701 and B-601 were tightened. Filotos were taken of potential
E/00/4 4			mew monitoring well locations. Vac gauges on blower intakes need to be replaced. NOTE. New Dwyer anemometer
5/22/14	10:55 AM	EJB	
			System down upon arrival. Alarms found onsite: PAH-2501 XCH @ 18:11 5/25/14, LAHH-501 VLS @ 14:39 5/26/14,
			LAHI-501 VLS @ 14:49 5/26/14. B-701 was increased to 55%. Air sparge time was increased to 15min on all groups.
			First cartridge water filter replaced. Vac gauges on blower intakes need to be replaced. System operational upon
5/27/14	11:00 AM	EJB	departure.
			System operational upon arrival/departure. B-701 was increased to 60% and 4 Mercer street wells were closed but
			caused a VFD shutdown after about 1.5hrs, so B-701 was moved to 53% and wells M2 and M15 were closed. Air
			sparge time was increased to 40min on zones D and E and air sparge time was decreased to 5min on zones A,B and
6/3/14	11:00 AM	EJB	C. PID readings were taken.
6/10/14	10:30 AM	EJB	System operational upon arrival/departure. Air sparge time was increased to 10min on zones A,B and C.
			System operational upon arrival/departure. Air sparge time was increased to 45min on zones D and E. AS wells in
			zone D MAS-17, MAS-16, MAS-22, MAS-23, MAS-25 and MAS-26. Zone D wells VAS-3, VAS-6 and VAS-12 were
6/16/14	10:40 AM	EJB	moved to zone B.
			System operational upon arrival. Monthly vapor and water samples taken. Both cartridge water filters were replaced.
6/25/14	9:00 AM	NAG	Due to >10% concentration exiting the primary carbons, the system was LOTO until the next carbon changeout.

# SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Westlake Avenue

ERI Job No	031326	03B											VPC Am	av.				_								DPE Syste	em Skid (E	3-701)				r	DPE Syst	om Skid (B	-801)
		T		Slack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	FIC Into 2nd VPC2	HC Into 2nd VPC3	HC out Slack 1	HC oul Slack 2	HC out Stack 3	Samples Collected?	VPC Line Drain Qly	Magnahəlic Gaugə	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Magnahelic Gauge	Vac inlo VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg
Date	Time	Nan	me	VPC-1	VPC-1	VPC-1	VPC-2 °F	VPC-2	VPC-2	VPC-3 °F	VPC-3 fl/min	VPC-3 SCFM	INF-1 ppmv	INF-2 ppmv	INF-3 ppmv	INT-1 ppmv	INT-2 ppmv	INT-3 ppmv	DSCHG-1 ppmv	DSCHG-2 ppmv	DSCHG-3 ppmv	Y/N	gał	"H ₂ O	"H ₂ O	"H ₂ O	*F	"H₂O	ppmv	ppmv	"H ₂ O	"H ₂ O	"H ₂ O	*F	но
	0 10.0			NIKA	NIM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	Y	-	80.0	26	29	78	37	NM	29.9	0.07	26	25	78	35
1/3/2014	12:3		IR	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0,5	0.5	0.0	0.0	0.0	n	_	0.06	26	31	80	37	NM	16.0	0,06	26	26	78	35
1/6/2014	16:4:	5 E	EJB.	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	na	na	na	na	na	na	n	_	0.06	-28	32	78	37	NM	21.1	0.07	26	25	73	35
1/7/2014	11.3	0 E	IJВ	72.0	5400	503.1	72.0	5210	485.4	71,1	4980	464.7	NM	NM	NM	0.3	0.5	0.4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19.3	0.06	25	26	78	37
1/8/2014	16:3	0 E	JB	NM	NM	NM	NM	NM	NM	NM.	NM	NM	NM	NM	NM	0.2	0.3	0.4	.0.0	0.0	0.0			0.04	18	21	77	38	NM	26.4	80.0	26	28	78	36
1/9/2014	16:0	0 E	BL	71.0	5540	515.9	69.0	5310	496.4	68,0	5300	496.4	NM	NM	NM	0,2	0.3	1.0	0.0	0.0	0.0	n	-	0.04	22	25	76	38	NM	34.1	0.07	20	20	70	36
1/10/201	4 9:30	рЕ	JB	75.8	5600	517.4	73.3	5410	502.2	73.0	5690	528.5	NM	NM	NM	1.6	2.1	3.1	0.2	0.3	0.5	n		0.05	22	20	82	37	NM	21.5	0.08	28	30	83	36
1/13/201	4 16:4	0 E	JB	80.2	5560	509.0	77.1	5780	532.2	76.2	5950	548,7	NM	NM	NM	1.0	1.4	3.2	0.5	0.0	0.9			0.05	22	26	82	37	NM	20.2	0.08	27	32	62	36
1/14/201	4 11:3	0 E	EJB	79.8	5430	497.4	77.0	5690	524.0	76.5	6000	553.0	NM	NM	NM	0.0	0.1	3.6	0.0	0.7	0.6	n		0.04	23	27	83	37	NM	22.5	0.07	27	33	84	36
1/15/201	4 15:2	0 E	EJB	81.3	5610	512.5	78,2	5590	513.6	77:1	5840	537.7	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0	n		0.04	24	28	76	37	NM	14,8	0.07	28	36	77	36
1/16/201	4 10:1	5 N	IAG	72.9	5800	538,2	72.9	4600	421.0	74.8	5050	464.5	NM	NM	NM	0.0	0.4	3.9	0_1	0.2	0.2	n		0.08	34	37	80	36	NM	36.5	0.12	44	51	85	32
1/17/201	3 12:1	5 N	AG	70.6	5000	491.1	76.2	4000	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.8	6.5	0.2	0,0	0.1	n		0.08	33	37	79	37	NM	37.9	0,11	44	59	82	33
1/21/201	4 14-1	5 N	AG	87.2	4800	429.9	83.2	5100	460.1	80.9	5150	466.6	NM	NM	NM	3.1	7.8	16,3	0.1	0.4	0.5	n		0.14	46	50	91	34	NM	42.8	9,17	53	65	89	31
1/22/201	4 10:3	0 6	EJB	80.0	4950	451.8	79.3	5060	462 4	81.1	5500	500.9	NM	NM	NM.	0.0	2.2	11.5	0.0	01	0.2	n		0.14	42	48	88	36	NM	53.2	0,10	33	52	81	34
1/23/201	4 16:3	0 E	E.JB	75,5	4560	418.2	74,8	4770	438.1	76.0	5150	471.9	NM	NM	NM	0.0	2.5	12,5	0.1	0.2	0.2	n		0.14	40	48	85	34	NM	56.6	0,10	32	50	80	33
1/24/201	3 17:3	0 E	зjв	76.4	4720	432,2	75,5	4790	439.3	77.3	5250	479.9	NM	NM	NM	0.0	2.6	14.0	0.3	0.2	0.1	n	-	0.14	41	49	85	34	NM	52,5	0.09	32	100	80	33
1/27/201	4 12:0	0 E	BL	74.4	4710	431.9	74.2	4700	431.1	76.0	5200	475.4	NM	NM	NM	0.0	3.2	14.7	0.0	0.0	0.1	Y.	-	0.12	41	50	84	33	NM_	52.8	0.09	31	50	81	32
1/28/201	4 13:1	5 E	EJB	78.6	4830	439.5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM.	0.1	4.1	15.5	0.0	0.2	0.3	0		0.12	40	51	88	33	NM	43.5	0.13	59	60	90	28
1/29/201	4 10:4	0 E	JB	85.1	5050	450.9	79.6	4510	406.8	77,5	5020	454.6	NM	NM.	NM	0.2	4.4	13.9	0.1	0.1	0.1	n		0.14	44	54	85	31	NM.	NM	0.17	56	61	88	28
1/30/201	4 14:4	5 N	IAG	83.4	5050	452.3	79.1	4800	433.3	76,8	4900	444.4	NM	NM 10.7	NM 05.0	0.1	3,1	7.0	0.0	0.0	0.0			0.15	46	57	80	31	34.4	27.3	0.13	47	56	76	30
1/31/201	4 11:3	0 N	IAG	73.7	4700	429.6	71.2	4500	413.2	70.1	4500	414.1	NM	NM	NM	0.0	37	10.3	0.0	0.0	0.0	n		0.12	40	53	78	33	NM	45.1	0.12	46	52	78	30
2/3/2014	9:00		UB .	77.3	5100	464.1	76.0	4625	430,2	76.0	4925	403.1	11.5	23.3	35.0	0.0	4.6	12.0	0.0	0.3	0.2	n		0.15	46	57	83	32	35,9	33.1	0.13	48	54	81	30
2/11/2014	13.0		IAG	90.0	5100	449.7	85.6	5000	444.3	82.9	5050	451	14.7	25.0	35.5	0.1	10,4	17.2	0.0	0.0	0.0	n		0.17	50	62	87	29	35.5	37.6	0.15	51	58	86	27
2/12/201	1 10.4	5 N	AG	87.4	4900	438,4	87.7	5400	482.9	86.5	5400	484	29.3	24.5	24.5	0.1	13.1	21.0	0.0	0.0	0,8	n		0.16	47	62	94	32.5	34,9	36.1	0.15	51	56	95	32
2/13/201	13:3	0 N	AG	82.7	4700	422.9	84.0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0.0	0.0	0.0	0.0	0.0	0,0	0		0,18	48	62	90	31	29.8	31.1	0.15	51	58	91	31
2/17/201	14:4	5 N	IAG	81.1	4600	415.2	82.5	4750	427.6	82.7	5000	450	22.3	18.5	19.0	0.0	0.0	0.0	0.0	0.0	0,0	0		0,19	51	66	90	31	28.7	27.1	0.15	52	56	90	31
2/19/201	12:0	0 N	AG	82.9	4800	432,5	82.9	5200	468.6	82.3	5400	487	19.5	15.9	16,4	0.0	0.0	0.0	0.0	0.0	0,0	Y		0.19	49	63	89	31.5	25.6	26.0	0.14	49	55	88	32
2/20/201	9:45	N	AG	81.4	4800	434.0	81,4	5075	458.8	81.4	5500	497	22.3	17 1	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0		0.19	50	64	87	32	26.8	30.4	0.18	49	54	03	32
2/25/2014	12.00	0 E	JB	88.8	4920	438.8	88.6	5600	499 7	88.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.17	48	66	94	32	31.5	29.1	0.19	40	57	92	24
2/26/2014	14.00	0 N	AG	88,1	4150	365.2	86.8	4500	395.5	86.5	4675	411	24.3	20.0	19.7	0.0	0.0	01	0.0	0.0	0.0	n		0.19	49	70	91	24	26.1	31.3	0.20	63	70	95	22
2/27/2014	12:30	D N	AG	86.8	4100	359,1	88,3	4475	390.8	88.3	4800	419	23.2	19.1	19.8	0.0	0.1	0.1	0.0	00	0.0	0		0.20	50	53	90	22	24.3	27.5	0.32	62	65	94	21
3/3/2014	14:00	0 N/	AG	85.2	3925	344.0	87.4	4375	381.8	86.8	4450	389	21,3	18.8	18.7	0.0	0.0	00	0.0	0.0	0.0			0.19	50	53	91	22	30.4	34_6	0.25	67	73	96	20
3/5/2014	12:00		18	85.8	3880	339.2	87.6	4250	370.4	87.4	5700	3/5	23.6	20.1	19.4	0.0	0.0	0.0	0.0	0.0	0.0			0.26	52	56	96	24	26.4	32.4	0.32	67	71	102	22.5
3/10/2014	15-90		AG	92.2	4800	376.5	94.0	4775	415.2	89.5	4950	434	32.7	24.8	25.2	0.0	0.0	0.0	0.0	0.0	0.0	Ý		0.34	65	68	97	22	31.2	44.7	0.34	71	74	100	22
3/14/2014	10:15	5 N/	AG	90.5	4580	400.7	91.0	4900	428.3	90.4	5300	464	31.4	23.8	23 7	0.0	0.0	0.0	0.0	0,0	0.0	n	_	0.48	70	73	99	25	34.3	38,4	0.47	73	77	100	25
3/18/2014	13:45	i NA	AG	91.9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23.7	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0,58	74	71	100	26	24.5	38.8	0.45	75	80	100	24
3/20/2014	10:30	NA	AG	90.1	4750	416.6	90.6	5000	438.2	90.8	5350	469	31.4	26.0	26.0	0.0	0.0	0.0	0.0	.0.0	0.0	n	_	0.63	71	75	99	27	31.4	34.9	0.48	74	79	99	24.5
3/24/2014	10.00	NA	AG	96,0	4900	423.5	97.8	5500	473.8	97.6	5750	496	31.4	26.3	26.3	0.9	0.1	0.7	0.0	.0,0	00	n	-	0.40	75	76	105	24	34.8	44.3	0.30	17	80	105	29
4/1/2014	12:00	NA	AG	92.4	4600	399.2	93.3	4950	428.9	93.0	5400	468	33.2	27.1	26.8	6.5	1.6	4.7	0.1	0.0	0.0	n		0.35	73	76	105	23	37.1	49.5	0.44	- 14		105	-
4/4/2014	10:00	EJ	JB			4		-		-		-	-			-						-					400		17.8	21.8	0.40	73	76	109	23.5
4/11/2014	13:00	NA	AG	101.1	5075	434.4	102.5	5600	478.1	102.5	5900	504	18,2	16.0	16.0 T	00	0,0	0.0	0.0	0.0	0.0	1		0.18	7.2	4	137	23	38.2	4/1	10.32	74	1	102	ZS.S
1/16	-	1	21.	14.6	1 1/00		1.12.2	1-700	2. (Ll.)	16	1235	L	1-1NT	-16	2 101	3	V-	INF	.12	1320	>	L	J - '	DSCI	16	Q	12	000		100					
11.							1	V - D9	FLUACI	-18	1240	V	- 1.01	-20	130	D	V.	INE	-2C	1325	***	6	5-1	ur.	رباد	-10	17	215			3				
							1	V - D:	sung	-30	1245	V	-INT	-30	1250		7-	NF.	)@	135	Ş	(.	) -	NF.	- W	SIE		02	~				0313260	J3B Field Datz	a log 140411

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03132603B Field Data log 140411 4/1 Prov 14

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### 8.24E-11 lbs/ft³ = 1 microgram/m³ microgra n/m3 = 40.9 x ppmv x M (STP)

	Falipated	Tank		1		1	1	/ /		1 7			sid	ir Sparge Sk	A			
Comments	Renoved (Vapor)	Transfer Pump Discharge Pressure	LPC2 Water Pressure	LPC1 Waler Pressure	Effluent Totalizer	Tank Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	Sparge Compressor Hour Meter	Blower Hour Meter	Blower Hour Meter	Magnahelic gauge	Pressure out HX	Temp out HX	Pressure into HX	Temp into HX	Blower Outlet HC	Blower Inlet HC pre-dil)
	10s	psi	psi	psi	gal	P-5501 hrs	P-501 hrs	P-401 hrs	C-2201 hrs	B-801 hrs	B-701 hrs	"H ₂ O	PSI	*F	PSI	°F		
		10.1	NM	NM	965	1	1	1	283	247	284	4.5	8	44	7	105	ppmv	ppmv
		9.7	NM	NM	1,286	1	1	1	397	361	398	4.5	85	44	1	125	25.2	NM
		9.8	NM	NM	1,287	1	1	1	400	364	401	4.5	6	44	4	140	17.9	NM
		10	NM	NM	1,394	1	1	1	419	383	420	4.5	6	42	4	110	1/2	NM
		10	NM	NM	1,740	1	1	1	447	411	448	4.5	5	43	4	120	10.4	NM
	-	9,6	NM	NM	1,799	1	1	1	471	435	472	50	8	43	7	120	74.9	NM
	-	9.8	NM	NM	1,822	1	1	1	488	453	489	50	7.5	48	7	125	12.0	NIM
		9.9	NM	NM	2,430	1	T	1	568	532	568	5.0	6.5	50	6	128	15.7	CVIVI
		10	NM	NM	2,430	1	1	1	586	550	587	5.0	6.5	52	6	125	18.0	N/KA
		9.8	NM	NM	2,460	1	1	1	612	578	615	5.0	7.0	51	6	125	14.4	NIM
t writer, for pressure readings.	U.	NM	NM	NM	2,462	1	1	1	631	597	634	5.0	6.0	41	7.5	118	17.3	NIM
t water for pressure readings.	L.	NM	NM	NM	2,462	1	1	1	656	623	659	5.0	6.0	41	6.5	118	15.0	NIA
t water for prossure readings. PID Readings laken.		NM	NM	NM	2,462	1	1	1	725	692	728	5.0	6.5	42	6	120	12.8	NAA
I to reduce dilution air further, but percistent VEDW-8101 warms prevented this. PID Readings taken	^	11	NM	NM	2,501	1	1	1	754	721	757	5.0	5.5	44	6	123	15.9	NM
I water for pressure readings.		NM	NM	NM	2,501	2	1	1	774	740	777	5.0	6.5	48	6	125	14.6	NM
t water for pressure readings.	11	NM	NM	NM	2,516	2	1	1	804	770	807	5.0	8,5	46	8	125	16.2	NM
t water for pressure readings.		NM	NM	NM	2,516	2	1	1	829	795	832	5.3	7.0	48	6	125	14.5	NM
		9.8	NM	NM	2,516	2	1	1	895	861	898	5.5	6.5	44	6	115	15.2	NM
t water for pressure readings.	la la	NM ·	NM	NM	2,533	2	1	1	920	886	923	5.0	8.0	48	8	130	13.5	NM
dilution all a bit on B-801. Tank trans planp press work down after switching discharge to direct drain (not to Balter tank)	6	6.1	NM	NM	2,984	2	1	1	943	909	946	5.0	8.5	50	Q	125	16.5	NM
own upon arrival, restarted, opened dialiun slightly on 801. Baker tank pumped out. Inf sample ports installed prediation for each bi	5	7	NM	NM	3,309	2	1	1	960	926	963	5,5	7	45	g	128	NM	NM
own upon antival, restarted, opened daution slightly on 801. AS readings takes, individual well PiD Readings completed. Baker tark	3	7	NM	NM	3,385	2	1	1	963	929	966	5.5	8.5	39	10	119	13.5	27.5
perational open arrival. Individual weil PID Readings taken for 3/4 wells.	5	5.2	NM	NM	3,406	2	1	1	1032	998	1035	5.5	8.7	40	7	118	14.2	NM
perational upon antival/departure, PID readings completed. AS well readings taken.	5	NM	NM	NM	3,418	2	1	1	1060	1026	1063	5.5	8.0	38	8	118	13	24.9
perational upon annual/departure. 701 & 801 blowers reduced to 60% from 65%. Sparge compresser increased from 25% to 50%.	5	12	NM	NM	3,823	3	1	1	1227	1192	1229	8.0	6	49	8	142	15.2	25.7
perational upon serval/departure, 801 PID Readings completed. Sparge readings completed, 801 VLS pump had lost its prime and		12	NM È	NM	4,318	3	13	1	1252	1218	1255	8.5	6	56	7	145	13	22.8
perational upon arrival/departure. Siemens carbon change for VPCs 1-1, 2-1, 3-1, & 3-2, 701 PiD Readings completed. Precarbon		12	NM	NM	4,352	3	13	2	1272	1237	1274	8.5	6	55	9	144	10,7	18.6
own upon anival due to 801-VLS High-High This caused HT pump to stop, so the containment area was full as a result. Containment		12	NM	NM	5,377	4	27	2	1338	1304	1341	8,5	7	49	8	141	11.1	18.2
own upon serval due to a VFD-8202 PNL alarm. Dilution air was increased säg(tily on 801 blower, Compliance air samples were tak		12	NM	NM	5,728	4	27	2	1364	1329	1366	9.0	7	47	8	141	7.9	17,5
perational upon arrival/departure. Monthly water samples were taken, 801 PID Readings were completed. NOTE: 801 VLS transfer		12	NM	NM	5,791	4	27	2	1385	1351	1388	9.0	9	47	9.5	144	6.2	10.7
perational upon anival/departure. 701 PID Readings were completed.	3	12	-NM	NM	6,061	4	27	2	1507	1473	1510	8,0	10	56	9.5	146	6,5	9.6
perational upon anival/departure. Blower VFDs were both reduced to 40%. Sparge VFD were increased to 80%. Dilution was decre		12	NM	NM	6,061	4	27	2	1533	1499	1536	8.0	8.5	59	9	172	8,6	10.2
perational upon anival/departure. Disution was closed for both blowers. 301 PIO Readings completed.		12	NM	NM	6,061	4	27	2	1556	1522	1559	8.0	9.0	58	10	169	10.4	11.8
perational upon antival/departure. Sparge readings taken, Attempted unsuccessfully to upload program to the PLC-need to contact I own upon antival due to a VFD-8202 PNL alarm (VFD alarm code OLF). System operational upon departure. 701 PID Readings we		12	NM	NM	6,888	5	27	2	1653	1619	1656	8.0	8.0	57	10.5	165	10.8	10.7
perational upon arrival/departure, 801 PID Readings were completed. 701 was raised to 45% power, 801 was raised to 40%. Both i	1	5.2	NM	NM	7,812	6	27	2	1691	1657	1694	7.5	12.2	61	11	165	9.1	9.8
es not recogrize PLC, all settings are locked by admin.Skid Readings taken from PLC		5.2	NM	NM	8,477	6	28	2	1739	1705	1742	16.0	11.9	65	12	171	7.4	9.2
perational upon armaNdeparture. The 9 lateral wells on the 701 manifold were closed 1/2 way. Monthly vapor and water compliance perational upon arrival/departure, The lateral wells on 701 were closed 2/3 way. 701 was raised to 60%. 801 was raised to 50%. Bo		5.2	NM	NM	10,088	7	28	2	1813	1779	1816	13.0	11.8	57	12	168	7.9	8
less. Compliance punch list was completed with the exception of the unistrut caps (ran cut). Skild Readings taken from PLC		5.2	NM	NM	10,460	8	29	2	1904	1869	1907	13.0	13.4	58	14	171	9.2	9.4
perational upon arrival/departure. M9, M10, & M17 true union bail valves were lightoned. Additional LOTO, photos were laken for A&		5.2	NM	NM	11,796	9	29	2	2003	1969	2006	15.5	12.6	54	13	176	10.2	9.4
perational upon arrival/departure, 701 & 801 PID Readings ware completed, Additional LOTO pics takan, Walked for PSCAA, had the perational upon arrival/departure, Westlake SVE & Sparge wells were shut-off 701 reduced to 50%, 801 elevated to 58%. Walked f	3	5.2	NM	NM	12,039	9	29	2	2048	2013	2051	18	12.3	48	13	167	9.7	10
í ón.		5.2	NM	NM	12,420	9	30	2	2143	2109	2146	15.0	13.4	57	14	182	12.8	15.7
perational upon artival/departure, 801 reduced to 50% (now both 701 & 801 are @ 50%) Broaktbrough has reached over 10% in ca		6.2	NM	NM	13,728	10	30	2	2337	2303	2340	14.5	15,1	62	15.5	193	16.1	22.1
perational upon arrival, system LOTO upon departure. System abut down for carbon replacement. OTO upon arrival The tops were removed from the 3 privnary carbon vessels. Evoque changed out carbon and also removed the 4,					-	<u>14</u>	-					FEY	1.	-		-		-
as restanted. The system was operational upon departure.	1	5.8	NM	NM	14,011	11	30	1 2	2409	0070	2414	1 200/	154	00	45.5	000	10.0	

System operation arrived/ deflect. Spage rendings. PiD,

r. Samples taken. (V-INF-701, 801). PID was not operating property.	
r: Samples taken. (V-INF-201, 801). PID was not operating property.	
r. Samples taken. (V-INF-201, 801). PID was not operating property. ed up.	
r. Samples taken. (V-INF-701, 801). PID was not operating property. eed up.	
r. Samples taken. (V-INF-701, 601). PID was not operating property. ad up.	
r: Samples taken. (V-INF-701, 801). PID was not operating property. .ed up.	
r: Samples talvan, (V-INIF-701, 801). PID was not operating property. 	
r: Samples tali,an. (V-INIF-701, 801). PID was not operating properly. .ed up. I found running dry, Roprimed=DK. Pluenbing was modified to even out [] to VPCs.	
r. Samples taken. (V-INF-701, 601). PID was not operating properly. eff up. found running dry, Rophmed=DK. Plumbling was modified to even out [] to VPCs. In filter replaced.	
c. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. found running dry. Rophmed=OK, Plumbing was modified to sven out ( ) to VPCs. In filler replaced. while replaced.	
c. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. found running dry. Rophmed=DK. Plumbing was modified to even out [] to VPCs. In filter replaced. mpaed out, system restarted. Sparge manifold readings completed.	
c. Samples taken. (V-INF-701, 401). PID was not operating properly. ed up. found running dry. Reprinted=DK. Plumbling was modified to even out [] to VPCs. In filter replaced. Imped cut, system restarted. Sparge manifold readings completed. n addition to influent samples. 701 PID Readings completed.	
c. Samples taken. (V-INF-701, 601). PID was not operating properly. ad up. .found running dry, Reparend #DK. Plumbling was modified to even out [ ] to VPCs. In filter replaced. In filter replaced. addition to influent samples. 701 PID Readings completed: to addition to influent samples. 701 PID Readings completed: to addition to influent samples. 701 PID Readings completed:	
r: Samples taken. (V-INF-701, 601). PID was not operating properly. .ed up. .found running dry, Represed=DK. Plumbing was modified to even out [] to VPCs. an litter replaced. amped out, system restarted. Sparge manifold readings completed. a addition to influent amples. 703 PID Readings completed. a tablicosing its prime.	
c. Samples taken. (V:INF-701, 601). PID was not operating property. ed up. found running dry. Reprimed=OK. Plumbting was modified to sven out ( ) to VPCs. In litter replaced. In addition to influent estanted. Sparge manifold readings completed. In addition to influent samples. 701. PID.Readings completed. In a till losing its prime.	
r. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. I found running dry. Reprimed=DK. Plumbing was modified to even out ( ) to VPCs. In titer replaced an addition to influent samples. 703 PID Readings completed out, system restarted. Sparge manifold readings completed out system restarted. Sparge manifold readings completed out system restarted ware taken.	
r. Samples taken. (V-INF-701, 801). PID was not operiAling property. 	
r. Samples taken. (V-INF-701, 801). PID was not operitiling properly. 	
r. Samples taken. (V-INF-701, 801). PID was not operating property. 	<ul> <li>Skikl Readings taken</li> </ul>
r: Samples talvan. (V-INF-701, 801). PID was not operating property	<ul> <li>Skit Readings taken</li> <li>to upload program to the PLC</li> </ul>
r. Samples taken. (V-INF-701, 801). PID was not operating property. ed up. I ound running dry. Reprimed=OK. Plumbting was modified to even out ( ) to VPCs. an liter replaced. an addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In the same samples. 701 PID Readings completed. In the both blowers. Sparge readings were taken. I to both blowers. Sparge readings were taken. I to both blowers. Stiel Readings taken from PLC ompleted. VFD for blower 601 nominal motor amp rating increased from 11.0 to 14. ars are running at 9 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully	<ul> <li>Skikl Readings taken</li> <li>to upload program to the PLC</li> </ul>
c. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. found running dry, Reprimed=OK. Plumbling was modified to even out ( ) to VPCs. In liter replaced. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. It to both blowers. Sparge readings wans taken. Ceptiveledges. Shift Readings taken from PLC are running at 9 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully rptos ware taken. Skidt Readings taken from PLC	<ul> <li>Skikl Readings taken</li> <li>to upload program to the PLC</li> </ul>
c. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. found running dry, Rophmed-OK, Plumbing was modified to even out [] to VPCs. In titler replaced. In the replaced. In addition to influent samples. 701 PID Readings completed. In the influent samples. 701 PID Readings completed. It is both blowers. Sparge readings wave taken. It is both blowers. Still Readings taken from PLC or prove taken. Skill Readings taken from PLC otors were running at 10.5 amps steadity. The sparge compressor was raised to 10	<ul> <li>Skit Readings laken</li> <li>to upload program to the PLC</li> <li>S% and the intervals were set</li> </ul>
c. Samples taken. (V-INF-701, 601). PID was not operating property. ed up. found running dry, Rophmed-OK, Plumbing was modified to even out [] to VPCs in filer replaced mped out, system restarted. Sparge manifold readings completed a addition to influent samples. 701 PID Readings completed. to both blowers. Sparge readings ware taken. If to both blowers. Sparge readings ware taken. r priveledges. Skid Readings taken from PLC or priveledges. Skid Readings taken from PLC in a running at 0 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully replay ware taken. Skid Readings taken from PLC otors were running at 10.5 amps steadity. The sparge compressor was raised to 10	<ul> <li>Skirl Readings taken</li> <li>to upload program to the PLC</li> <li>o% and the intervals were set</li> </ul>
c. Samples taken. (V-INF-701, 401). PID was not operating property. ed up. found running dry. Reprinted=DK. Plumbing was modified to even out[] to VPCs. In filer replaced. In the replaced. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In the state of the samples. The samples completed is a seen out[] to VPCs. It is both blowers. Sparge readings ware taken. It is both blowers. Sparge readings ware taken. It is both blowers. Sparge readings ware taken. It is both blowers. Sparge readings taken from PLC It is an a laken. Skid Readings taken from PLC ours are running at 0 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully replace ware taken. Skid Readings taken from PLC ours were running at 10.5 amps steadly. The sparge compressor was raised to 10 acuments. Sparge readings were taken. Skid Readings taken from PLC	<ul> <li>Skid Readings taken</li> <li>Skid Readings taken</li> <li>To upload program to the PLC</li> <li>S% and the intervals were set</li> </ul>
r. Samples taken. (V-INF-701, 801). PID was not operating property. ed up. found running dry, Rophmed=DK. Plumbing was modified to even out [] to VPCs. at filer replaced. ampled out, system restarted. Sparge manifold readings completed. in addition is influent samples. 701 PID Readings completed. in addition is influent samples. 701 PID Readings completed. in a still basing its prime. d to both bitweers. Sparge readings ware taken. c priveletiges. Skid Readings taken from PLC organized. VFD for blower 601 nominal motor amp rating increased from 11.0 to 14. ars are running at 9 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully nples were taken. Skid Readings taken from PLC totors were running at 10.5 amps steadily. The sparge compressor was raised to 10 bituments. Sparge readings ware taken. Skid Readings taken from PLC id not above, is field Readings taken from PLC	5 Skikl Readings taken to upload program to the PLC D% and the intervals were set
c. Samples taken. (V-INF-701, 401). PID was not operating property. ed up. .found running dry, Rophmed=DK. Plumbing was modified to even out [] to VPCs. In filter replaced. In filter replaced. In addition is influent samples. 701 PID Readings completed. Is in similarit samples. 701 PID Readings completed. Is to both biowers. Sparge readings ware taken. C priveletiges. Skid Readings taken from PLC and VFD for blower 601 nominal motor amp rating increased from 11.0 is 14. orgenerative and a state of 0.0.8 Amps. Attempted unsuccessfully rules were taken. Skid Readings taken from PLC outors were running at 10.5 amps steadily. The sparge compressor was raised to 10 occuments. Sparge medings wate taken. Skid Readings taken from PLC id not abov up. Skid Readings taken from PLC SGAA, but they did not show up. Small breakthrough through primary carbons. Skid	5 Skiel Readings taken to upload program to the PLC 0% and the intervals were set Readings taken from PLC
r: Samples taken. (V-INF-701, 801). PID was not operating property. ed up. found running dry. Reprinted=DK. Plumbing was modified to even out [] to VPCs ar filter replaced. amped out, system restarted. Sparge manifold readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to influent samples. 701 PID Readings completed. In addition to bower 601 nominal motor and prating increased from 11 8 to 14. In the influent samples. The sample compressor was raised to 10 are same running at 10.5 amps sleadity. The sparge compressor was raised to 10 incuments. Sparge readings taken from PLC Influent samples. Stild Readings taken from PLC Influent samples.	5 Skikl Readings taken to upload program to the PLC 0% and the intervals were set Readings taken from PLC
In Samples taken, (V-INF-701, 601), PID was not operating property.  Inder up.  I found running dry, Ropprend-DK, Plumbling was modified to even out [] to VPCs  I filter replaced  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influent samples. 703 PID Readings completed  In addition to influence taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In addition to influence taken. Skid Readings taken from PLC  In additin the influence taken. Skid Readings t	2. Skill Readings taken to upload program to the PLC D% and the intervals were set Readings taken from PLC
In the second sec	2. Skiel Readings taken to upload program to the PLC D% and the intervals were set Readings taken from PLC pops were reinstalled and the
r. Samples taken. (V-INF-701, 801). PID was not operating property. ed up. I ound running dry, Rophmed-DK, Plumbing was modified to even out [] to VPCs. In filer replaced. In the replaced. In the restance of the second se	2. Skid Readings taken to upload program to the PLC 0% and the intervals were set Readings taken from PLC ops were reinstalled and the

SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Westlake Avenue ERI Job No. 03132603B

		-	-		-		1		1	1	1	VPC An	ray.	-						4					DPE S	ystem Skid	(8-701)	_		6		DPE S	ystem Skid (
Data	Time		Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Slack Air Temp	Stack Air Velocity	Flowrale	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2.1d VPC2	HC Into 2nd VPC3	HC out Stack 1	HC out Slack 2	HC out Stack 3	Samples Collected?	VPC Line Drain	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg
pate	Time	Name	VPC-1	VPC-1	VPC-1	VPC-2	VPC-2	VPC-2	VPC-3	VPC-3	VPC-3	INF-1	INF-2	INF-3	INT-1	INT-2	INT-3	DSCHG-1	DSCHG-2	DSCHG-3	-	Qty	-		1		-	(pro dity	1-51	-		-	1.
		-		rvmin	SCFM		rizmin	SCFM		Itimin	SGFM	ppmv	ppinv	ppmv	ppmv	vmqq	ppmv	ppmv	ppmv	ppmv	Y/N	gal	"H ₂ O	"H ₂ O	"H ₂ O	۴	"H ₂ O	ppmv	ppmv	"H₂O	"H ₂ O	"H₂O	*F
12/27/2013	12,00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	Y	-	0.08	26	29	78	37	NM	29.9	0.07	26	25	78
1/3/2014	12.30	EJB	NM	NM.	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	0.5	0.0	0.0	0.0	<u>n</u>	-	0.06	26	31	80	37	NM	16.0	0.06	26	26	78
1/6/2014	16.45	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	na	na	na	na	na	68	n		0.06	28	32	78	37	NM	21,1	0.07	26	25	73
1/7/2014	11:30	EJB	72.0	5400	503.1	72.0	5210	485.4	71.1	4980	464.7	NM	NM	NM	0.3	0.5	0.4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19.3	0.06	25	26	78
1/8/2014	16:30	EJB	NM	NM	NM	NM	NM	NM	NM.	NM	NM	NM	NM	NM	0.2	0.3	0.4	0.0	0.0	0.0	n	-	0,04	18	21	77	38	NM	25,4	0.06	26	26	78
1/9/2014	16:00	EJB	71.0	5540	515.9	69.0	5310	496,4	68.0	5300	496.4	NM	NM	NM	0.2	0.3	1.0	0.0	0.0	0.0	<u>n</u>		0.04	22	25	76	3.8	NM	34.1	0.07	26	27	76
1/10/2014	9:30	EJB	75.8	5600	517.4	73.3	5410	502.2	73.0	5690	528,5	NM	NM	NM	1.6	2.1	3.1	0,2	0,3	0.5	. 0		0.05	22	26	79	38	NM	20.6	0.07	27	29	79
1/13/2014	16:40	EJB	80.2	5560	509.0	77.1	5780	532.2	76.2	5950	548.7	NM	NM	NM	1.0	1,4	3.2	0.5	0.8	0.9	n		0.05	22	26	82	37	NM	21,5	0.08	26	30	83
1/14/2014	11:30	EIB	79.8	.5430	497.4	77.0	5690	524.0	76.5	6000	553.0	NM	NM	NM	0.0	0.1	0.6	0.0	0.0	0.0	n		0.05	22	26	82	37	NM.	20.2	0.08	27	32	82
1/15/2014	15:20	EJB	81.3	5610	512.5	78.2	5590	513.6	77.1	5840	537.7	NM	NM	NM	0.0	0.5	3.6	0,4	0.7	0.6	n.		0,04	23	27	83	37	NM	22.5	0.07	27	33	84
1/16/2014	10:15	NAG	72.9	5800	538.2	/2.9	5750	533,6	72.8	5800	538.3	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0	n		0.04	24	28	76	37	NM	14.8	0.07	28	36	77
1/17/2013	12:15	NAG	80.7	4850	441.1	//.3	4600	421,0	74,6	5050	464,5	NM	NM	NM	0.0	0.4	3.9	0.1	0.2	0.2	n		0.08	34	37	80	36	NM	36.5	0.12	44	51	85
1/20/2014	9:00	EJB	(9.6	SARKO	456.7	/6.2	4920	452.2	14,2	4940	455.7	NM	NM	NM.	0.0	0.8	6,5	0.2	0.0	0,1	n		0.08	33	37	79	37	NM	37.9	0.11	44	59	82
1/21/2014	14.15	NAG	8/2	4800	429.9	83.2	5100	460.1	80.9	5150	466.6	NM	NM.	NM	3,1	7.8	16.3	0,1	0.4	0.5	n		0.14	46	50	91	34	NM	42.8	0.17	53	65	89
1/22/2014	10:30	EIB	80,0	4950	451.8	79.3	0060	462.4	81-1	5500	500.9	NM	NM	NM	0.0	2.2	11.5	0.0	0.1	0.2	n	-	0.14	42	48	88	36	NM	53.2	0.10	33	52	81
1/23/2014	16:30	EJB	75.5	4560	418.2	(4.8	4770	438.1	76.0	5150	4/1.9	NM	NM	NM	0.0	2.5	12.5	0.1	0.2	0.2	n		0,14	40	48	85	34	NM	56.6	0.10	32	50	80
1/24/2013	17:30	EJB	76.4	4720	4.32.2	- /5.5	4790	439.3	70.0	5250	479.9	NM	NM	NM	0.0	2,6	14.0	0.3	0.2	0.1	n		0.14	41	49	85	34	NM	52.5	0.09	32	100	80
1/2//2014	12:00	EJB	74,4	4/10	431.9	74.2	4700	431.1	70.0	5200	4/5,4	NM	NM	NM	0.0	32	14.7	0.0	0.0	0.1	V		0.12	41	50	84	33	NM	52.8	0.09	31	100	77
1/28/2014	13:15	EJB	/8.6	4830	439.5	70.0	4840	4410	79,1	5230	4/5.4	NM	NM	NM	0.1	4.1	15,5	0.0	0.2	0.3	n		0.12	40	51	88	33	NM	43,5	0.09	.31	50	81
1/29/2014	10:40	EJB	85.1	5050	450.9	79.6	4900	406.8	70.0	1000	454.6	NM	NM	NM	0.2	4.4	13,9	0,1	.0.1	0.1	n	-	0.14	44	55	-88	31	NM	41,5	0.13	-59	60	90
1/30/2014	14:45	NAG	70.7	1700	402.3	79.1	4800	433.3	70.4	49(4)	444.4	NM	10.7	NM	0,1	31	10,1	0.0	0.0	0.0	γ		0,15	44	54	85	31	NM	NM	0.17	.56	61	88
0/2/2014	0.00	EID	77.2	5100	429.0	74.1	4500	410.4	74.2	4300	414.1	14.6	NIM	42.6	0.0	1.9	100	0.0	0.0	0.0	<u>n</u> .		0.15	46	.57	80	31	34.4	27.3	0,13	47	56	76
2/1/2014	12.00	NAC	77.3	4400	300.0	76.0	4625	430.2	76.0	4025	403,1	11.5	22.2	25.0	00		10.3	0.0	0,0	0,0		-	0.12	40	53	78	33	NM	45.1	0.12	46	.52	78
2/14/2014	11.00	NAG	000	5100	440.7	95.9	5000	4443	92.0	5050	445	14.7	25.0	35.5	0.0	10.4	17.0	0.0	0.3	0.2	.0.	10.00	0.15	46	57	83	32	35.9	33.1	0.13	48	54	81
2/12/2014	10.45	NAG	97.4	4000	138.1	87.7	5400	444.5	86.5	5400	491	20.3	24.5	24.5	0.1	13.1	21.0	0.0	0.0	0.0	n		0.17	50	62	87	29	35.5	37.6	0,15	51	58	86
2/12/2014	12.20	NAG	02.4	4300	438,4	94.0	4600	402.5	99.6	5400	464	24.7	29.5	24,0	0.0	0.0	210	0.0	0.0	0.8	n	-	0.16	47	62	94	32.5	34.9	36.1	0,15		_56	95
2/13/2014	14-45	NAG	02.7	4700	422.5	92.5	4750	413,0	82.7	5000	450	22.3	18.5	19.0	0.0	0.0	0.0	0.0	0.0	0.0	n		0.18	48	62	90	31	29.8	31.1	0,15	51	58	91
2/10/2014	12:00	NAG	91.1	4000	4102	82.0	5200	468.6	82.3	5400	497	10.5	15.9	16.4	0.0	0.0	0.0	0.0	0.0	00	n		0.19	51	66	90	31	28,7	27.1	0.15		.56	90
2/20/2014	0:45	NAG	91.4	4900	434.0	91.4	5075	458.8	81.4	5500	407	22.3	17.1	16.8	0.0	0.0	0.0	0.0	0.0	0.0	Y		0.19	49	63	89	31.5	25.6	26.0	0.14	49	55	88
2/25/2014	12:00	EIR	88.8	4800	439.0	88.6	5600	490.7	88.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0		-	0.19	50	64	87	32	26.8	30.4	0.18	49	58	85
2/26/2014	14.00	NAG	86.1	4150	365.2	86.8	4500	395.5	86.5	4675	411	24.3	20.0	19.7	0.0	0.0	0.1	0.0	0.0	0.0	- 0	-	0.17	48	66	94	32	31.5	29.1	0.19	46	54	93
2/27/2014	12:30	NAG	86.9	4100	359.1	AR 3	4475	390.8	88.3	4800	419	23.2	19.1	19.8	0.0	0.1	01	0.0	0.0	0.0	- 0		0.19	49	68	91	24	25.9	32.4	0.23		57	92
3/3/2014	14.00	NAG	85.2	3925	344.0	87.4	4375	381.8	86.8	4450	389	21.3	18.8	18.7	0.0	0.0	0.0	0.0	0.0	0.0			0.20	50	70	90	23	26.1	31.3	0.30	63	70	95
3/5/2014	12.00	EJB	85.8	3880	339.2	87.6	4250	370.4	87.4	4300	375	25.3	19.8	20.0	0.0	0.0	00	0.0	0.0	0.0	0		0.10	50	53	90	22	24.3	27.5	0.32	62	65	94
3/7/2014	13.00	NAG	92.2	4800	417.0	94.6	5475	473.6	94.0	5700	494	23.6	20.1	19.4	0.0	0.0	0.0	0.0	0.0	0.0	0		0.00	50	53	91	- 22	30.4	34.6	0.25	6/	7.3	96
3/10/2014	15.30	NAG	89.5	4325	376.5	90.1	4775	415.2	89.5	4950	431	32.7	24.8	25.2	0.0	0.0	00	0.0	0.0	0.0	u v		0.20	52	00	90	24	26.4	32,4	0.32	67	-1	102
3/14/2014	10.15	NAG	90.5	4580	400.7	91.0	4900	428.3	90.4	5300	464	31.4	23.8	23.7	0.0	0.0	0.0	0.0	0.0	0.0	×		0.34	20	68	97	22	31.2	44.7	0.34		74	100
3/18/2014	13:45	NAG	91.9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23.7	0.0	0.0	0.0	0.0	00	0.0	n		0.50	74	74	100	25	34,3	38,4	0.47	- 13		100
3/20/2014	10:30	NAG	90.1	4750	416.6	90.6	5000	438.2	90.8	5350	469	31,4	26.0	26.0	0.0	0.0	0.0	0,0	0.0	0.0	0		0.63	74	75	100	20	24.5	34.8	0.45	75	80	100
3/24/2014	10.00	NAG	96.0	4900	423.5	97.8	5500	473.8	97.6	5750	496	31,4	26.3	26.3	0.9	0.1	07	0.0	0,0	0.0			0.40	76	70	105	21	31.4	34.9	0.48	74	79	- 99
4/1/2014	12:00	NAG	92.4	4600	399.2	93.3	4950	428.9	93.0	5400	468	33.2	27.1	26.8	6.5	1,6	4.7	0.1	0.0	0.0	n		0.36	79	70	105	29	34.8	44.3	0.30		80	106
4/4/2014	10:00	EJB	-				1	-		-	-	-	-	-				-	-				0,00	15	10	105	23	37.1	49.5	0.44	14	11	105
4/11/2014	13:00	NAG	101.1	5075	434.4	102.5	5600	478.1	102.5	5900	504	18.2	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0			0.48	21	74	100	24	17.0	-	0.40	-		
4/16/2014	11:15	EJB	94.2	4700	406.8	95.3	5750	496.7	_94.6	5800	502	44.0	35.0	35.3	0.0	0,0	0.0	0.0	0.0	0.0	Y		0.18	72		102	22	20.2	40.1	0.40	7.4	/6	109
4/13	1	And .	913	460	)	93.0	5350		93.1	5550		46	40	31	O	0	0	0	D	0		1	0,20	62	~	100	24	47	50	0.30	74 -		108

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1100 40

# Conversions 6 24E-11 lbs/ft³ = 1 microgram/m³

microgram/m3 = 40.9 x ppmv x M (STP)

-801)					Air Sparge S	kid				1			1						
Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Temp into HX	Pressure into HX	Temp out HX	Pressure out HX	Magnahelic gauge	Blower Hour Meter	Blower Hour Meter	Sparge Compressor Hour Meter	VLS Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	Tank Transfer Pump Hour Meter	Effluent Totalizer	LPC1 Water Pressure	LPC2 Water Pressure	Tank Transfer Pump Discharge Pressure	Estimated Hydrocarbons Removed (Vapor)	
"H-O	nomy	ppmy	°F	PSI	°F	PSI	"H ₂ O	B-701 hrs	B-801 hrs	hrs	hrs	hrs	P-5501 hrs	gal	psi	psi	osi	ibs	
26	NM	25.2	125	7	44	8	4.5	284	247	283	- i	1	1	965	NM	NM	10.1		
35	NM	17.0	140	4	44	6.5	4.5	398	361	397	1	1	1	1.286	NM	NM	0.7		
35	NM	17.2	115	4	42	6	4.5	401	364	400	1	1	1	1,287	NM	NM	9.8	1	
37	NM	16.4	125	4	45	6	4.5	420	383	419	1	1	1	1,394	NM	NM	10	1	
36	NM	16.3	120	4	43	5	4.5	448	411	447	1	1	1	1,740	NM	NM	10		
35	NM	31.8	120	7	43	8	5.0	472	435	471	1	1	1	1,799	NM	NM	9.6		
36	NM	12.0	125	7	48	7.5	5.0	489	453	488	1	1	1	1,822	NM	NM	9.8		
36	NM	15.7	126	6	50	6.5	5.0	568	532	568	1	1	1	2,430	NM	NM	9.9		
36	NM	18.0	125	6	52	6,5	5,0	587	550	586	1		1	2,430	NM	NM	10		
36	NM	14.4	125	6	51	7.0	5,0	615	578	612	1	1	1	2,460	NM	NM	9.8	1	
36	NM	17.3	118	7.5	41	6.0	5.0	634	597	631	1	1	1	2,462	NM	NM	NM	1	Insufficient water for pressure readings
32	NM	15.0	118	6.5	41	6.0	5.0	659	623	656	1	1	1	2,462	NM	NM	NM		Insufficient water for pressure readings
33	NM	12.8	120	6	42	6.5	5.0	728	692	725	1	1	1	2,462	NM	NM	NM	-	Insufficient water for pressure readens. PID Readings taken.
31	NM	15.9	123	6	44	5.5	5.0	757	721	754	1	1	1	2,501	NM	NM	11		Attempted to reduce dilution air further, but persistent VFDW-6101 alarms prevented this. PID Readings taken
34	NM	14.6	125	6	48	6.5	5.0	777	740	774	1	1	2	2,501	NM	NM	NM		Insufficient water for pressure readings
33	NM	16.2	125	8	46	8.5	5.0	807	770	804	1	1	2	2,516	NM	NM	NM		Insufficient water for pressure readings.
33	NM	14.5	125	6	48	7,0	5,3	832	795	829	1	1	2	2,516	NM	NM	NM		Insufficient water for pressure readings
32	NM	15.2	115	6	44	6.5	5,5	898	861	895	1	1	2	2,516	NM	NM	9.8	1	
32	NM	13.5	130	.8	48	80	5.0	923	886	920	1	1	2	2,533	NM	NM	NM		Insufficient water for pressure readings.
28	NM	16.5	125	y	50	8.5	5,0	946	909	943	1	1	2	2,904	NM	NM	6.1		Reduced dialition air a bit on B-801. Tank frans pump press went down after switching discharge to direct drain t
28	NM	NM	128	9	45	7	5,5	963	926	960	1	1	2	3,309	NM	NM	7		System down upon arrival, restarted, opened dilution slightly on 801 Baker tank pumped out. Inf sample ports in
30	27.5	13.5	119	10	39	8.5	5,5	966	929	963	1	1	2	3,385	NM	NM	7		System down upon errival, restarted, opened dirulion sightly on 801. AS readings taken, individual well PID Read
30	NM	14.2	118	7	40	8.7	5,5	1035	998	1032	1	1	2	3,406	NM	NM	5.2		System operational upon arrival, Individual well PID Readings taken for 3/4 wells.
30	24.9	13	118	8	38	8.0	5,5	1063	1026	1060	1	1	2	3,418	NM	NM	NM.		She' un operational upon arrival/departure, PID readings completed, A5 well martings taken.
27	257	15.2	142	8	49	6	8.0	1229	1192	1227	1	1	3	3,823	NM	NM	12	1	System operational upon arrival/departure 701 & 801 blowers reduced to 66% from 65%. Sparge compressor in
32	22.8	13	145	7	56	6	8.5	1255	1218	1252	1	13	3	4,318	NM	NM	12		zystem operational upon attivat/departure, 801 PID Readings completed, Sparge readings completed, 801 VL8 p
31	18.6	10.7	144	g	55	6	8.5	1274	1237	1272	2	13	3	4,352	NM	NM	12		System operational upon arrival/departure. Semens carbon change for VPCs 1-1, 2-1, 3-1, 8 3-2, 701 PID Read
31	18.2	11.1	141	8	49	7	8,5	1341	1304	1338	2	27	4	5,377	NM	NM	12		System down upon arrival due to 801-VLS High-High This caused HT pump to stop, so the containment area wa
32	17.5	7.9	141	8	47	7	9.0	1366	1329	1364	2	27	4	5,728	NM	NM	12		System down upon arrival due to a VFD-9202 PNL alarm. Dilution air was increased slightly on 601 blower. Comp
32	10.7	6.2	144	9.5	47	9	9.0	1388	1351	1385	2	27	4	5,791	NM	NM	12		System operational upon arrival/departure. Monthly water samples were taken. 801 PID Readings were complete
32	9.6	6.5	146	9.5	56	10	8.0	1510	1473	1507	2	27	4	6,061	NM	NM	12		System operational upon arrivel/departure, 701 PID Readings ware completed
24	10.2	8.6	172	9	59	8,5	8.0	1536	1499	1533	2	27	4	6,061	NM	NM	12		System operational upon arrival/departure, Blower VFDs were both reduced to 40%. Sparge VFD were increased
22	11.8	10.4	169	10	58	9,0	8.0	1559	1522	1556	2	27	4	6,061	NM	NM	12		System operational upon anival/departure. Daution was alcosed for both blowers, 601 PID Readings completed
21	10.7	10.8	165	10.5	57	8.0	8.0	1656	1619	1653	2	27	5	6,888	NM	NM	12		System operational upon arrival/departure. Sparge readings taken. Attempted unsuccessfully to upload program to
20	9.8	9.1	165	11	61	12.2	7.5	1694	1657	1691	2	27	6	7,812	NM	NM	5,2		against down upon arrive due to a VFD-8202 PNL alarm (VFD alarm code OLF). System operational upon depart from PLC
22.5	9.2	7.4	171	12	65	11.9	16.0	1742	1705	1739	2	28	6	8,477	NM	NM	5.2		System operational upon arrival/departure, 801 PID Readings were completed. 701 was raised to 45% power, 801 PLC-device does not receignize PLC, at settings are tooked by admin. Skid Readings taken from PLC
22	8	7.9	168	12	57	11.8	13.0	1816	1779	1813	2	28	7	10,088	NM	NM	5.2		System operational upon arrival/departure. The 9 loteral wells on the 791 manifold were closed 1/2 way. Monthly v
25	9.4	9.2	171	14	58	13.4	13.0	1907	1869	1904	2	29	8	10,460	NM	NM	5.2		System operational upon arrival/departure. The lateral wells on 701 were closed 2/3 way. 701 was raised to 60% tet to 10 minutes, Compliance punch tat was completed with the exception of the unistruit caps (ran out). Skild Re
24	9.4	10.2	176	13	54	12.6	15.5	2006	1969	2003	2	29	9	11,796	NM	NM	5.2		System operational upon arrival/departure. M9, M16, 8, M17 true anion ball valves were tightened. Additional LOT
24.5	10	9.7	167	13	48	12,3	18	2051	2013	2048	2	29	9	12.039	NM	NM	5.2		System operational upon arrivalideparture, 701 & 601 PID Readings were completed. Additional LOTO pics taken
24	16.7	12.8	182	14	57	13.4	15.0	2146	2109	2143	2	30	9	12.420	NM	NM	5.2		opsenin operatornal upon arrivavdepanure. Westlake SVE & Sparge wata were shut-off 701 reduced to 50%, 801
23	22.1	16.1	193	15.5	62	15.1	14.5	2340	2303	2337	2	30	10	13,728	NM	NM	6.2		System operational upon annual/departure, 801 reduced to 50% (new bath 701, & 801 are @ 50%). Breakthrough
-	-		-			-	-	-		-	-	-	- <u>-</u>	-					System operational upon arrival, system LOTO upon departure. System shut down for carbon replacement.
23.5	15.9	13.3	200	15.5	68	15.4	26.0	2411	2373	2408	2	30	11	14,011	NM	NM	5.8		system Loro upon arrival. The tops were removed from the 3 primary carbon vessels. Evoqua changed out carbo system was restarted. The system was operational upon departure.
22.5	19.5	18.8	175	13	57	12.5	85	2529	2492	2526	2	30	11	14,093	NM	NM	5.9		System operational upon arrival/departure. Sparge readings were taken. PID readings were taken. Monthly vapor sr
011	100	21	170	13	60	12.1-	90	1697	Ilda.	12694	2	30	12	14.697	2-	A. 0	6.2		System operational upon account / depit

Ord in boowers topped off

Comments
Saker lank)
predikulion for each blower. Samples taken. (V-INF-701, 801). PID was not operating property.
mpleted, Baker tank picked up.
if from 25% to 50%.
ad lost its prime and was found running d/y. Reprimed=OK. Plumbling was modified to even out [] to VPCs
moleled. Precarbon water filter replaced
a paulit Containment numped nut system restanted Sname manifult reactions considered
er verein Generaling generalises ook afgeminingen op alle ander vereinge kompense.
ar sampers were taken in addition to innuent samples. /UT PID Readings completed.
E: 101.VLS transfer pump is still lesing its prime.
<ol> <li>Dilution was decreased to both blowers. Sparge readings were taken.</li> </ol>
LC-need to contact IT for privisedges. Skid Readings taken from PLC. 01 PID Readings were completed. VFD for blower 801 nominal motor amp rating increased from 11.6 to 14.0. Skid Readings taken
alsed to 40%. Both motors are running at 9 Amps, with max peaks of 10 8 Amps. Attempted unsuccessfully to upload program to the
Id water compliance samples were taken. Skid Readings taken from PLC s raised to 50%. Both motors were running at 10.5 amps shaidly. The sparge compressor was raised to 100% and the intervals were t taken from PLC
as were taken for A&OI documents. Sparge readings were taken, Skid Readings taken from PLC
d for PSCAA, but they did not show up. Skid Readings taken from PLC
od to 58%. Wailed for PSCAA, but they did not show up. Small break through through primary carborna. Skid Readings taken from
ched over 10% in carbon Iraina 1.8.3.
also removed the 4,000lbs of carbon from the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and th
were collected, and water samples were collected (NO FOG SAMPLES COLLECTED).

# SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Wesilake Avenue ERI Job No 03132603B

_	1	-	r	1	1	1	-	ī —	1		-	VPC Arra	y.	1	1			1	1			-			DPE Sy	ystem Skid	(B-701)					DPE S	ystem S
ate	Тітө	Name	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Slack Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Stack 1	HC out Stack 2	HC out Slack 3	Samples Collected?	VPC Line Drain Qty	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Oullet HC	Magnahelic Gauge	Vac into VLS	Vac into Blower	Terr Blow Disc
		1	VPC-1	VPC-1 ft/min	VPC-1 SCFM	VPC-2 °F	VPC-2 fVmin	VPC-2 SCFM	VPC-3 °F	VPC-3 ft/min	VPC-3 SCFM	INF-1 ppmv	INF-2 ppmv	INE-3 ppmv	INT-1 ppmv	INT-2 ppmv	INT-3 ppmv	DSCHG-1 ppmv	DSCHG-2 ppmv	DSCHG-3 ppmv	Y/N	gal	"H ₂ O	"H₂O	"H ₂ O	°F	"H ₂ O	ppmv	ppmv	"H ₂ O	H O	"H ₂ O	°F
2/27/2013	12.00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	Y		60.0	26	29	78	37	NM	29.0	0.07	26	25	7
3/2014	12:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	0.5	0.0	0.0	0.0	n	-	0.06	28	31	80	37	NM	16.0	0.06	26	26	7
2014	.16:45	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	na	na	na	na	na	na	n		0.06	28	32	78	37	NM	21.1	0.07	26	25	7
2014	11:30	EJB	72.0	5400	503.1	72.0	5210	485,4	71.1 NM	4980 NM	464.7	NM	NM	NM	03	0.5	0.4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19.3	0.06	25	26	
/2014	16:00	EJB	71.0	5540	515.9	69.0	5310	496.4	68.0	5300	496.4	NM	NM	NM	0.2	0.3	1.0	0.0	0.0	0.0	n	1,21	0.04	22	25	76	38	NM	34,1	0.07	26	27	7
0/2014	9:30	EJB	75.8	5600	517 4	73.3	5410	502.2	73.0	5690	528.5	NM	NM	NM	1,6	21	3.1	0.2	0.3	0.5	n		0.05	22	26	79	38	NM	20.6	0.07	27	29	7
3/2014	16:40	EJB	80.2	5560	509.0	77 1	5780	532.2	76.2	5950	548,7	NM	NM	NM	7.0	1.4	3,2	0.5	0.8	0.9	n		0.05	22	26	82	37	NM	21.5	0.08	26	30	8
4/2014	11:30	EJB	79.8	5430	497 4	77.0	5690	524.0	76.5	6000	553.0	NM	NM	NM	0,0	0.1	0.6	0.0	0.0	0.0	n	-	0.05	-22	26	82	37	NM	20.2	0.08	27	32	8
5/2014	15:20	EJB	81.3	5610	512.5	78.2	5590	513.6	77.1	5840	537.7	NM	NM	NM	0.0	0.5	36	0.4	0.7	0.6	n	-	0.04	23	27	83	37	NM	22.5	0.07	27	33	8
6/2014	10:15	NAG	72.9	5800	538.2	72.9	5750	533.6	72.8	5800	538.3	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.04	24	28	76	37	NM	14.8	0.07	28	36	7
/2013	9:00	EJB	79.6	5000	441.1	76.2	4920	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.4	6.5	0.2	0.0	0.1	0		0.08	33	37	79	30	NM	30.5	0.12	44	59	8
/2014	14-15	NAG	87.2	4800	429.9	83.2	5100	460.1	80.9	5150	466.6	NM	NM	NM	3.1	7.8	16.3	0.1	0.4	0.5	n		0.14	46	50	91	34	NM	42.8	0.17	53	65	8
2/2014	10:30	EJB	80.0	4950	451.8	79.3	5060	462.4	81,1	5500	500.9	NM	NM	NM	0.0	22	11.5	0.0	0.1	0.2	n	-	0.14	42	48	88	36	NM	53.2	0.10	33	52	8
3/2014	16:30	EJB	75.5	4560	418.2	74.8	4770	438.1	76.0	5150	471.9	NM	NM	NM.	0.0	2.5	12.5	0,1	0.2	0.2	n		0.14	40	48	85	34	NM	56,6	0.10	32	50	8
4/2013	17:30	EJB	76.4	4720	432.2	75,5	4790	439.3	77.3	5250	479.9	NM	NM	NM	0.0	2.6	14.0	0.3	0.2	0,1	n	-	0.14	41	49	85	34	NM	52.5	0.09	32	100	1
7/2014	12:00	EJB	74.4	4710	431.9	74.2	4700	431.1	76.0	5200	475.4	NM	NM	NM	0.0	32	14.7	0.0	0.0	0.1	Y	-	0.12	41	50	84	33	NM	52.8	0.09	31	100	7
8/2014	13:15	EJB	78.6	4830	439.5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM	0,1	4.1	15.5	0.0	02	0.3	n		0.12	40	51	88	33	NM	43.5	0.09	31	50	8
/2014	14-45	NAG	85.1	5050	450.9	79.0	4800	433.3	76.6	4900	434.6	NM	NM	NM	0.2	3.1	10.1	0.0	0.0	0.0	 		0.14	44	55	88	31	NM	41.5 NM	0.13	59	60	
1/2014	11.30	NAG	73.7	4700	429.6	71.2	4500	413.2	70.1	4500	414.1	14,2	19.7	25.8	0.0	1.9	7.0	0.0	0.0	0.0	,		0.15	46	57	80	31	34.4	27.3	0.13	47	56	7
2014	9.00	EJB	77.3	5100	464_1	74.1	4700	430.2	74,2	5060	463.1	NM	NM	NM	0.0	3.7	10.3	0.0	0.0	0.0	.0	- 6	0.12	40	53	78	33	NM	45.1	0.12	46	52	7
2014	13.00	NAG	77.3	4400	399.9	76.0	4625	421.4	76.0	4925	449	11.5	23,3	35.0	0.0	4.6	12 0	0.0	0.3	0.2	n	-	0.15	46	57	83	32	35,9	33.1	0.13	48	54	8
2014	11.00	NAG	90.0	5100	449.7	85.8	5000	444,3	82,9	5050	451	14,7	25.0	35.5	0.1	10.4	17.2	0.0	0.0	0.0	n	1.	0.17	50	62	87	29	35.5	37.6	0.15	51	58	8
/2014	10:45	NAG	87.4	4900	438.4	87.7	5400	482,9	86,5	5400	484	29.3	24.5	24.5	0,1	13.1	21.0	0.0	0.0	0.8	n	-	0.16	47	62	94	32.5	34,9	36.1	0.15	51	56	9
2014	13:30	NAG	82.7	4700	422.9	84,0	4600	413.0	83.6	5100	458	24,7	22.6	21.2	0.0	0.0	0.0	0.0	0.0	0.0		-	0.18	48	62	90	31	29,8	31.1	0.15	51	58	9
12014	12:00	NAG	81 1 82 9	4600	415.2	82.0	5200	468.6	82.7	5400	450	19.5	15.9	19.0	0.0	0.0	0,0	0.0	0.0	0.0	<u>n</u>		0.19	51	66	90	31	28.7	27.1	0.15	52	56	9
2014	9:45	NAG	81.4	4800	434.0	81.4	5075	458.8	81.4	5500	497	22.3	17.1	16.8	0.0	0.0	0.0	0.0	0.0	0.0	n		0,19	50	64	87	32	26.8	30.4	0.14	49	58	8
2014	12:00	EJB	88.8	4920	438,8	88.6	5600	499.7	88.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.17	48	66	94	32	31.5	29.1	0.19	46	54	9
5/2014	14:00	NAG	86,1	4150	365.2	86.8	4500	395.5	86.5	4675	411	24,3	20.0	19.7	0.0	0.0	0.1	0.0	0.0	0.0	n		0.19	49	68	91	24	25.9	32.4	0.23	53	57	9:
7/2014	12:30	NAG	86.8	4100	359.1	88.3	4475	390.8	88.3	4800	419	23.2	19.1	19.8	0.0	0.1	0,1	0.0	0.0	0.0	n	-	0.20	50	70	90	23	26.1	31.3	0.30	63	70	9.
/2014	14:00	NAG	85.2	3925	344.0	87.4	4375	381.8	86.8	4450	389	21,3	18.8	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0	-	0.74	50	53	90	22	24.3	27.5	0.32	62	65	94
/2014	12.00	EJB	85.8	3880	339.2	.87.6	4250	370.4	87.4	4300	375	25.3	19.8	20.0	0.0	00	0.0	0.0	0.0	0.0	n	-	0.19	50	53	91	22	30.4	34.6	0.25	67	73	91
/2014	15:30	NAG	89.5	4325	376.5	94,6	4775	415.2	94.0 89.5	4950	494	32.7	20.1	25.2	0.0	0.0	0.0	0.0	0,0	0.0	n		0.26	52	56	96	24	26.4	32.4	0.32	67	71	10
/2014	10 15	NAG	90.5	4580	400,7	91.0	4900	428.3	90.4	5300	464	31.4	23.8	23 7	0.0	0.0	0.0	0.0	0.0	0.0	n		0.48	70	73	99	25	34.3	38.4	0.47	73	77	10
/2014	13:45	NAG	91.9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23.7	0.0	0.0	0.0	0.0	0.0	0.0	n		0.58	74	71	100	26	24.5	38.8	0.45	75	80	10
2014	10:30	NAG	90.1	4750	416.6	90.6	5000	438.2	90,8	5350	469	31.4	26.0	26.0	0.0	0.0	0.0	0.0	0,0	0.0	n		0.63	71	75	99	27	31.4	34,9	0.48	74	79	9
2014	10:00	NAG	96.0	4900	423.5	97.8	5500	473.8	97.6	5750	496	31.4	26.3	26.3	.0,9	0.1	0.7	0.0	0.0	0.0	n	-	0.40	75	76	105	24	34,8	44.3	0.30	77	80	10
2014	12:00	NAG	92.4	4600	399.2	93.3	4950	428.9	93,0	5400	468	33.2	27.1	26.8	6.5	1.6	4.7	0.1	0.0	0_0	n	-	0.35	73	76	105	23	37.1	49.5	0.44	74	77	10
2014	10:00	EJB	-		-	-	-	470.1		-	-		-	-	-	-	-	-		-	-	-	-	-									
2014	11:15	EIR	94.2	4700	434.4	95.3	5750	478.1	94.6	5800	502	44.0	35.0	35.3	0.0	0.0	0.0	0,0	0.0	0.0	_n		0.48	71	74	108	24	17.8	21.8	0,40	73	76	
2014	11:00	EJB	91.3	4660	406,2	93,0	5350	464.9	93,1	5550	482	46	40	31	0	0	0	0	0	0	n		0.20	62	-	102	24	47	50	0.32	74		10
2014	12:30	NAG	113.5	NM	NC	114.2	NM	NC	114.0	INM_	NC	39.4	32.3	32.7	0.0	0.0	0.0	0.0	0.0	0.0	0	-	0.59	73	74	119	24	48.3	53.1	0.23	73	<b>Z</b> 5	118
	1045	93	98.8	3470	· · · · · · · ·	100.2	410		100,01	4250	1	25.2	21.0	20.4	6.0	20	0.3	0.0	0.0	0.0	4		-45	23	74	109	23	36.0.	36.5	.30	75	76	110
5		4			V-DS	5646	10	21115	/	V-	INT -	1@	150	V-	INF-	10	1200	>		W-D	SCH	5	er	120		,		2.0	sun	20	1300	>	
ľ.					V-DS	scha	- 26	2 1120	2	1/-1	NT-	7.0,	1145	V-	INF-	2.2	1201			W-01	uk-1-	XI	@ 1:	240		NE	1	2-0	DECI	160	0313260	3B Field Dat	a log 140
					· V0	ent-	- 31	1125		V ~ (		20		12.	INF-3	30	0151				) <i></i> - (	, 51	Di	250	. 1	10		1 - 5	Deri	440	130	J ()	
				ł	v - v	20149	16	100		V-1	NI-	501	135	V	1100 -	-				$\omega - 1\lambda$	レート	ا در	C	0,0	r		0	- 1	su	- CS	131	0	

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system restart 5/8/2014

# Conversions 6 24E-11 lbs/ft³ = 1 microgram/m³

microgram/m3 = 40.9 x ppmv x M (STP)

	meneral magnetic rest	100	Constant				4							6.0						-
Com		Estimated Hydrocarbons Removed	Tank Transfer Pump Discharge	LPC2 Water Pressure	LPC1 Water Pressure	Effluent Totalizer	Tank Transfer Pump Hour Motor	VLS Transfer Pump Hour	VLS Transfer Pump Hour Metor	Sparge Compressor Hour Meter	Blower Hour Meter	Blower Hour Meter	Magnahelic gauge	Pressure out HX	Air Sparge S Temp out HX	Pressure into HX	Temp into HX	Blower Outlet HC	Blower Inlet HC (pre-dil)	9-801) Press Blower Dischg
		(vapor)	Pressuro		1		P-5501	P+501	P-401	C-2201	B-801	B-701	1			1			(pro uny	
		lbs	psi .	psi	psi	gal	hrs	hrs	hrs	hrs	hrs	hrs	*H ₂ O	PSI	°F	PSI	*F	ppmv	ppmv	"HjO
			10.1	NM	NM	965	1	.1	1	283	247	284	4.5	8	44	7	125	25.2	NM	35
			9.7	NM	NM	1,286	1	1	1	397	361	398	4.5	6,5	44	4	140	17.9	NM	35
			9.8	NM	NM	1,287	1	1	1	400	364	401	4.5	6	42	4	115	17.2	NM	35
			10	NM	NM	1,394	1	1	1	419	383	420	4,5	6	45	4	125	16.4	NM	37
			10	NM	NM.	1.740	1	1	1	447	411	448	4.5	5	43	4	120	16,3	NM	36
			9.6	NM	NM	1,799	1	1	1	471	435	472	5.0	8	43	7	120	31.8	NM	35
			9.8	NM	NM	1,822	1	1	1	488	453	489	5.0	7.5	48	7	125	12.0	NM	36
			9.9	NM	NM	2,430	1	1	1	568	532	568	5.0	6.5	50	6	126	15.7	NM	38
			10	NM	NM	2,430	1	1	1	586	550	587	5.0	6.5	52	6	125	18.0	NM	36
			9.8	NM	NM	2,460	1	1	1	612	578	615	50	7.0	51	6	125	14,4	NM	36
	Insufficient water for pressure readings.		NM	NM	NM	2,462	11	- 1	1	631	597	634	5.0	6.0	41	7.5	118	17.3	NM	36
	Insufficient water for pressure readings.		NM	NM	NM	2,462	1	1	1	656	623	659	5.0	6.0	41	6.5	118	15.0	NM	32
	Insufficient water for pressure readings. PID Readings taken.		NM	NM	NM	2,462	1	1	1	725	692	728	5.0	6.5	42	6	120	12.8	NM	33
elamis prevented this. PID Readings taken.	Attempted to reduce dilution air further, but persistent VFDW-810		11	NM	NM	2,501	1		1	754	721	757	5.0	5.5	44	6	123	15.9	NM	31
	Insufficient vistar for pressure readings.		NM	NM	NM	2,501	2	1	1	774	740	717	5.0	6.5	48	6	125	14,6	NM	34
	Issufficient water for pressure readings.		NM	NM	NM	2,516	2		1	804	770	807	5.0	8.5	46	8	125	162	NIM	33
	Insufficient water for pressure readings.		NM	NM	NM	2,516	2	1	1	829	795	832	5.3	7.0	48	6	125	14.5	NM	33
			9.8	NM	NM	2,516	2		1	895	861	868	5.5	6.5	44	6	115	10.2	NM	32
	insufficient water for pressure readings.		NM	NM	NM	2,533	2	- 1	- 1	920	886	923	50	0.5	48	0	105	10.0	NINA	20
win after switching discharge to direct drain (not to Baker tank).	Reduced diulion air a bit os B-801. Tank trans pump press went d		6.1	NM	NM	2,984	2		- 1	943	909	945	5.0	8.5	50	9	123	10,0	NIM	20
. Baker tank pumped out, init sample ports installed prediution f	System down upon annval, restarted, opened dilution slightly on 80		7	NM	NM	3,309	2			960	926	963	5.5	0.5	40	10	110	12.5	27.5	20
. AS readings taken, Individual well PID Readings completed. Bi	System d/wn upon arrival, restarted, opened diution slightly on 80		-	NM	PMM NIM	3,385	4			1022	929	1026	5.5	9.7	39	7	118	14.3	NM	30
for 3/4 wells.	System operational upon arrival, individual witil PID Readings take		0.2	NIM	NIM	3,400	2	1		1052	1026	1055	5.5	8.0	38	A	118	13	24.9	30
. AS well readings taken.	System operational upon errival/departure. PID roadings complete		10	NIM	NIM	3,410	2			1227	11020	1005	80	6	49	8	142	15.2	25.7	27
ced to 60% from 65%. Sparge compressor increased from 25%	System operational upon arrival/departure. 701 & 801 blowers red		12	NM	NIM	3,823	2	1		1252	1210	1229	0.0	e	43 56	7	145	13	22 R	32
leted. Eparge readings completed. 801 VLS pump had lost its p	system operational upon arrival-departure, ao1 PID Readings com		12	NIA	NIM	4,010	2	13	2	1272	1210	1274	8.5	6	55	0	144	10.7	18.6	31
for VPCs 1-1, 2-1, 3-1, & 3-2, 701 PIO Readings completed. P	System operational upon annval/departure. Siemeins carbon chang		12	NIM	NRA	5.377	4	27	2	1338	1304	1341	85	7	49	8	141	11.1	18.2	31
If pump to stop, so the containment area was full as a result. Co	system down upon arrival due to sUT-VLS High-High Tax caused.		12	NM	NM	5.728	4	27	2	1364	1329	1366	9.0	7	47	8	141	7.9	17.5	32
was increased signity on 801 blower. Compliance air samples	System down upon arriver due to a VPD-9202 Pres, aterm, Daubon.		12	NIM	NM	5,725	4	27	2	1385	1351	1388	9.0	9	47	9.5	144	6.2	10.7	32
vere taken. SOT PID Readings were completed NOTE 801 VLS	system operational upon arrival departure . 704 DID Boodings		12	NM	NM	5.061	4	27	2	1507	1473	1510	8.0	10	56	9.5	146	6.5	9.6	32
completed	system operational upon arrival/departure 701 PID Readings were		12	NM	NM	6.061	4	27	2	1533	1400	1536	80	85	59	9	172	8.6	10.2	24
reduced to 40%. Sparge VFD were increased to 80%. Disulion y	system operational upon arrival/departure. Blower VPDs were boil		12	NM	NM	5.061	4	27	2	1556	1522	1559	80	9.0	58	10	169	10.4	11.8	22
our biowers 801 PiD Readings completed	system operational upon annutrogenture. Course readless to the		12	NM	NM	6.888	5	27	2	1653	1619	1656	8.0	8.0	57	10.5	165	10.8	10.7	21
n code QLF). System operational upon departure 701 PID Rea	System down upon arrival due to a VFD-8202 PNL alarm (VFD alarment PD alarm)	5	52	NM	NM	7.812	6	27	2	1691	1657	1694	7.5	12.2	61	11	165	9.1	9.8	20
completed, 701 was raised to 45% power, 801 was raised to 40	System operational upon arrival/departure, 801 PID Readings were	S	5.2	NM	NM	8.477	6	28	2	1739	1705	1742	16.0	11.9	65	12	171	7.4	9.2	22.5
701 mm/did wan closed 1/2 way Mouthly wron and water on	isstem operational upon arrivatidenanture. The B lateral wells on th	5	5.2	NM	NM	10.088	7	28	2	1813	1779	1816	13.0	11.8	57	12	168	7.9	8	22
were closed 2/3 way 701 was raised to 60% 801 was raised to	ystem operational upon arrival/departure. The lateral wells on 701	5	52	NM	NM	10,460	8	29	2	1904	1869	1907	13.0	13.4	58	14	171	9.2	9.4	25
an ball values users lightened. Additional I OTO photos users inte	valiam operational upon arrival/departure A& M18 & M17 tone or	19	52	NM	NM	11,796	9	29	2	2003	1969	2006	15.5	12.6	54	13	176	10,2	9.4	24
were completed Additional I OTO pice takes Weited for BSCA	vitem operational upon arrival/denartive 701 & 801 PID Reading	s	5.2	NM	NM	12,039	9	29	2	2048	2013	2051	18	12.3	48	13	167	9.7	10	24.5
wells were shul-off. 701 reduced to 50%, 801 elevated to 58%	y www.operational.upon.arrival/departure Westlake SVE & Sparg	S	52	NM	NM	12 420	9	30	2	2143	2109	2146	15.0	13.4	57	14	182	12.8	15.7	24
v both 701 & 801 are & 50%). Breakthreads has reached and	yalem operational upon arrival/departure. 803 reduced to 50% (we	s	6,2	NM	NM	13,728	10	30	2	2337	2303	2340	14.5	15.1	62	15,5	193	16.1	22.1	23
han shul foun for cathers ranks and the state of the	villam operational union arrival, system LOTO upon departure. Sy	S	-	-	-	-		_						-	-	-		-		
ry carbon vessels. Evoqua changed oul carbon and also remov	ystem LOTO upon arrival. The lops were removed from the 3 prim	S	5.8	NM	NM	14,011	11	30	2	2408	2373	2411	26.0	15.4	68	15.5	200	13,3	15.9	23.5
on PID readient ware bligen Meethin server secondar time only	ystem operational upon emvaluppenettare. Source readings were to		5.9	NM	NM	14,093	11	30	2	2526	2492	2529	8.5	12.5	57	13	175	18.8	19.5	23.5
en. Oil looped off in B-801 and B-701. Ver service of the	ystem operational upon annual/decorture. Science residence under	5	6.2	NM	NM	14,692	12	30	2	2694	2660	2697	9.0	12.6	60	13	175	22	20	24
oint was set at 120°F. The imiling factor for temperature extrem not functioning property for the imiling factor for temperature.	1 blower down upon arrival for high blower outlet temp. Alarm set	7	6.2	NM	NM	14,967	12	30	2	2864	2829	2843	16.0	12.6	88	13	208	16.3	18.2	24
1 D 1 I	and with A a li		8.1		8	1567	1-2	20	9	1264	20191	3036	900	13	64	13	190	8.1	3.5	13

- Rented a nenopetier -

ments
for each blower. Samples taken. (V-INF-701, 801). PID was not operating property.
laker tank picked up
6 to 50%.
prime and was found running dry. Reprimed=CK. Plumbing was modified to even out [] to VPCs
recarbon water filter replaced.
ontaisment pumped out, system restarted. Sparge manifold readings completed.
s were taken in addition to influent samples. 701 PiD Readings completed
a porcent hundling an around up hunder
vas decreased to both blowers. Sparge readings were laken.
e contact iT for priviledges. Skid Readings taken from PLC adings were completed. VFD for blower 801 pomizial motor amp rating increased from 11.0 to 14.0. Skid Readings taken
1% Bolh molors are proving at 0 Amos, with may peaks of 10.8 Amos, Attempted unsurcessfully to unbed program to the PLC
one operations are reading as a veripe, warmer peaks of to a veripe Attempted analycessicity to dynad program to the read
amplance samples were taken. Skid Readings taken from PLC
50% Both motors were running at 10.5 amps steadily. The sparge compressor was raised to 100% and the intervals were set LC
on for A&OI documents. Sparge readings were laken. Skill Readings taken from PLC
VA, but they did not show up. Skid Readings taken from PLC
Wailed for PSCAA, but they did not show up Small breakthrough through primary carbons Skid Readings taken from PLC
10% in carbon trains 1 & 3
red lhe 4,000/bs of carbon from the last changeout from the site. Upon Evoqua's departure, the lops were reinstalled and the
ected, and water samples were collected (NO FOG SAMPLES COLLECTED)
intakes need to be replaced. nes was the sched80 PVC, which has an upper limit of 140°F, which is what both the 701 & 801 alarm setpoints were set to
I d I want de wellen
new replaced Mathly samply collected
Fob
Ŧ

### SYSTEM LOG SHEET

PHILLIPS 66 FACILITY #255353 600 Westlake Avenue ERI Job No. 03132603B

-	_	r	-		1							VPC An	ay							1	-		1		DPE Sy	stem Skid	(B-701)					DPE Sy	stom Skid (I
			Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1sl VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Stack	HC out Stack 2	HC out Stack 3	Samples Collected?	VPC Line Drain	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Iniel HC (pre-dil)	Blower Outlet HC	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg
Date	Time	Name	VPC-T	VPC-1	VPC-1	VPC-2	VPC-2	VPC-2	VPC-3	VPC-3	VPC-3	INE-1	INF-2	INF-3	INT-1	INT-2	INT-3	DSCHG-1	DSCHG-2	DSCHG-3	100	Oty		-		10		()					
-		-	*	ft/min	SCFM	°F	fl/min	SCFM	*F	ft/min	SCFM	ppmv	ppmv	ppmv	ppmv	ррту	ppmv	DDUUA	ppmv	ppmv	Y/N	gal	"H ₂ O	"H ₂ O	"H ₂ O	*F	"H ₂ O	ppmv	ppmv	"H ₂ O	"Н_О	"H_O	°F
12/27/201	3 12:00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0,1	0,0	0.0	0.0	v		0.08	26	29	78	37	NM	29.9	0.07	26	25	78
1/3/2014	12:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	0.5	0,0	0.0	0.0	n		0.06	26	31	80	37	NM	16.0	0.06	26	26	78
1/7/2014	11-30	EUB	72.0	5400	502.1	72.0	5210	495.4	71.1	MI/I 080b	464.7	NIM	NIM	NIM	0.2	0.5	0.4	0.0	0.0	0.0	n		0.03	-28	32	78	37	NM	21,1	0.07	26	25	73
1/8/2014	16-30	EIR	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.2	0.3	0.4	0.0	0.0	0.0		1	0.04	18	21	77	38	NM	25.4	0.06	25	20	78
1/9/2014	16.00	EJB	71.0	5540	515.9	69.0	5310	496.4	68.0	5300	496.4	NM	NM	NM	0.2	03	1.0	0.0	0.0	0.0	n	1.2.1	0.04	22	25	76	38	NM	34.1	0.07	26	27	76
1/10/2014	1 9:30	EJB	75.8	5600	517.4	73.3	5410	502.2	73.0	5690	528 5	NM	NM	NM	1.6	2.1	3.1	0.2	0.3	0.5	n		0.05	22	26	79	38	NM	20.6	0.07	27	29	79
1/13/2014	16:40	EJB	80.2	5560	509.0	77.1	5780	532.2	76.2	5950	548.7	NM	NM	NM	1.0	1.4	3,2	0.5	0.8	0.9	ŋ		0.05	22	26	82	37	NM	21.5	0.08	26	30	83
1/14/2014	11.30	EJB	79.8	5430	497_4	77_0	5690	524.0	76,5	6000	553.0	NM	NM	NM	0.0	0,1	0,6	0.0	0.0	0.0	n		0.05	22	26	82	37	NM	20.2	0.08	27	32	82
1/15/2014	15:20	EJB	81.3	5610	512.5	78,2	5590	513.6	.77.1	5840	537,7	NM	NM	NM	0.0	0,5	3.0	0,4	0.7	0,6	ń		0.04	23	27	83	37	NM	22.5	0.07	27	33	84
1/16/2014	10.15	NAG	72.9	5800	538.2	72.9	5750	533.6	72.8	5800	538.3	NM	NM	NM	0,0	0.0	0.0	0,0	0.0	0,0	n		0.04	24	28	76	37	NM	14.8	0.07	28	36	77
1/17/2013	12.15	NAG	80.7	4850	441_1	77.3	4600	421.0	74.6	5050	464.5	NM	NM	NM	0.0	0.4	3.9	0.1	0.2	0.2	n		0.08	34	37	80	36	NM	36.5	0.12	44	51	85
1/20/2014	9,00	EJB	79.6	5000	456.7	76.2	4920	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.8	6.5	0.2	0.0	0,1	n		0.08	33	37	79	37	NM	37.9	0.11	44	59	82
1/21/2014	14:15	NAG	87.2	4800	429.9	83.2	5100	460.1	80.0	5150	466.6	NM	NM	NM	3:1	7.8	16.3	0.1	0.4	0.5		-	0.14	46	50	91	34	NM	42.8	0.17	53	65	89
1/22/2014	10:30	EJB	80.0	4950	451.8	.79.3	5060	462.4	81.1	5500	500.9	NM	NM	NM	0.0	2.2	11.5	0.0	0.1	0.2	n		0.14	42	48	88	36	NM	53.2	0.10	33	52	81
1/23/2014	16:30	EJB	75.5	4560	418.2	74.8	4770	438,1	76.0	5150	471.9	NM	NM	NM	0.0	2.5	12.5	0.1	0.2	0.2	n		0.14	40	48	.85	34	NM	56.6	0.10	32	50	80
1/24/2013	17:30	EJB	76.4	4720	432.2	75.5	4790	439,3	77.3	5250	479.9	NM	NM	NM	0.0	2.6	14_0	0.3	0.2	0.1	n		0.14	41	49	85	34	NM	52.5	0.09	32	100	80
1/27/2014	12:00	EJB	74,4	4710	431,9	74.2	4700	431,1	76.0	5200	475.4	NM	NM	NM	0.0	3.2	14.7	0.0	0.0	0.1	Y		0.12	41	50	84	33	NM	52.8	0.09	31	100	77
1/28/2014	13:15	EJB	78.6	4830	439.5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM	0,1	4.1	15.5	0,0	0.2	0.3			0.12	40	51	88	33	NM	43.5	0.09	31	50	<u></u>
1/29/2014	10:40	EJB	85.1	5050	450.9	79.6	4510	406.8	77.5	5020	454_6	NM	NM	NM	0.2	4.4	13.9	0,1	0.1	0.1			0.14	44	55	88	31	NM	41.5	0.13	59	60	90
1/30/2014	14:45	NAG	83.4	5050	452.3	79,1	4800	433,3	76.6	4900	444.4	NM	NM	NM	0.1	3.1	10_1	0.0	0.0	0.0	Ŷ		0,15	44	54	85	31	NM	NM	0,17	56	-61	88
1/31/2014	11:30	NAG	73,7	4700	429,6	71,2	4500	413.2	70.1	4500	414,1	14.2	19,7	25.8	0,0	19	7.0	0.0	0,0	0,0	n		0.15	46	57	80	31	34,4	27.3	0,13	47	56	.76
2/3/2014	9.00	EJH	77.0	5100	464.1	74.1	4700	430.2	74.2	5060	46.3,1	NM	NM 00.2	NM	0.0		10.3	0.0	0.0	0.0	<u>n</u>	-	0.22	40	53	78	33	NM	45,1	0.12	46	52	
2/11/2014	11.00	NAG	90.0	5100	449.7	85.9	5000	421.4	82.0	5050	449	14.7	25.0	35.5	0.1	10.4	17.2	0.0	0.0	0.0			0.15	50	5/	07	32	35.9	33,1	013	48	54	81
2/12/2014	10.45	NAG	87.4	4900	438.4	87.7	5400	444.5	86.5	5400	484	20.3	24.5	24.5	01	13.1	210	0.0	0.0	0.8			0.16	47	62	04	32.5	24.0	26.1	0.15	51	58	05
2/13/2014	13:30	NAG	82.7	4700	422.9	84.0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0.0	0.0	0.0	0.0	0.0	0.0	0		0.18	48	62	90	31	29.8	31.1	0.15	51	58	91
2/17/2014	14:45	NAG	81.1	4600	415.2	82.5	4750	427.6	82.7	5000	450	22.3	18.5	19.0	0.0	0.0	0.0	0.0	0.0	0.0	n		0.19	51	66	90	31	28.7	27.1	0.15	52	56	90
2/19/2014	12.00	NAG	82.9	4800	432.5	82.9	5200	468.6	82.3	5400	487	195	15.9	16.4	0.0	0.0	0.0	0.0	0.0	0.0	Y		0.19	49	63	89	31.5	25.6	26.0	0.14	49	55	88
2/20/2014	9:45	NAG	81.4	4800	434.0	81.4	5075	458.8	81.4	5500	497	22.3	17.1	16.8	0.0	0.0	0.0	0.0	0.0	0.0			0.19	50	64	87	32	26.8	30.4	0.18	49	58	85
2/25/2014	12:00	EJB	88.8	4920	438.8	88.6	5600	499.7	88.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.17	48	66	94	32	31.5	29.1	0,19	46	54	93
2/26/2014	14:00	NAG	86,1	4150	365.2	86.8	4500	395.5	86.5	4675	411	24.3	20.0	19.7	0.0	0.0	0.1	0,0	0.0	0.0	n		0.19	49	68	91	24	25.9	32.4	0.23	53	57	92
2/27/2014	12:30	NAG	86.8	4100	359,1	88.3	4475	390.8	88.3	4800	419	23.2	19.1	19.8	0.0	0.1	0,1	0.0	0.0	0.0	n		0.20	50	70	90	23	28.1	31.3	0.30	63	70	95
3/3/2014	14:00	NAG	85.2	3925	344.0	87.4	4375	381.8	86,8	4450	389	21.3	18,8	18.7	0,0	0.0	0.0	0.0	0,0	0,0			0.74	50	53	90	22	24.3	27.5	0.32	62	65	94
3/5/2014	12:00	EJB	85.8	3880	339.2	87.6	4250	370.4	87.4	4300	375	25.3	19,8	20.0	0.0	0.0	0.0	0.0	0.0	0.0	n		0,19	50	53	91	22	30.4	34.6	0.25	67	73	96
3/7/2014	13:00	NAG	92.2	4800	417.0	94.6	5475	473.6	94.0	5700	494	23.6	20.1	19.4	0.0	0.0	0,0	0.0	0.0	0.0	n	-	0.26	52	56	.96	24	26.4	32,4	0.32	67	71	102
3/10/2014	15:30	NAG	89.5	4325	376.5	90.1	4775	415.2	89.5	4950	431	32,7	24,8	25.2	0.0	0.0	0,0	0.0	0.0	0.0	Y		0.34	65	68	97	22	31.2	44.7	0.34	71	74	100
3/14/2014	10.15	NAG	90,5	4580	400.7	91,0	4900	428.3	90.4	5300	464	31.4	23.8	23.7	0.0	0.0	0.0	0.0	0,0	0.0	0		0.48	70	73	99	25	34.3	38.4	0,47	73	77	100
3/18/2014	13.45	NAG	91.9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23.7	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.58	74	71	100	26	24.5	38.8	0.45	75	80	100
3/20/2014	10.30	NAG	90.1	4750	416.6	90.6	5000	438.2	90.8	5350	469	31.4	26.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0	0	-	0,63	71	75	99	27	31.4	34,9	0.48	74	79	99
3/24/2014	10.00	NAG	96,0	4900	423.5	97.8	5500	473.8	97.6	5750	496	31,4	26.3	26,3	0.9	0.1	0,7	0.0	0.0	0.0	0		0.40	75	76	105	24	34.8	44.3	0.30		80	106
4/1/2014	10:00	NAG E	92,4	4600	399,2	93,3	4950	428.9	93.0	5400	468	33.2	2/1	26.8	0,0	1.0	4,1	0,1	0.0	0.0	0		0.35	/3	76	105	23	37.1	49.5	0,44	74	77	105
4/11/2014	13:00	NAG	101.1	5075	434.4	102.5	5600	478.4	102.5	5000	504	18.2	16.0	16.0	0.0	0.0	0.0	0.0	0.0	-			0.49	71	74	100		17.0	-	-	70	70	100
4/16/2014	11.15	EIR	94.2	4700	406.8	95.3	5750	470.1	94.6	5800	502	44.0	35.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	v		0.18	72	14	103	29	38.3	40.1	0.40	74	10	109
4/23/2014	11:00	EJB	91.3	4660	406.2	93.0	5350	464.9	93.1	5550	482	46	40	31	0	0	0	0	0	0	n		0.20	62		100	24	47	50	0.30	74		108
4/30/2014	12:30	NAG	113.5	NM	NC	114.2	NM	NC	114.0	NM	NC	39.4	32.3	32.7	0.0	00	0.0	0.0	0.0	0.0	n		0.59	73	74	119	24	48.3	53 1	0.23	73	75	118
5/8/2014	10:45	EIB	98.8	3920	336.3	100.2	4110	351.8	100.0	4250	364	25.2	21.0	20.4	0.0	00	0.3	0.0	0.0	0.0	V		0.45	73	74	109	23	36.0	36.5	0.30	75	76	110
5/12/14	1630	ans !	113.3	3825		115.1	40K	)	114.9	445		26.0	20,5	200	O.D	0.1	0.0	0.0	0.2	0.0	n		0.40	73	73	24	23	37.1	57.7	7.22	24	75	124
1.1.1	1-1-1	1					1-1-									1	V							1		-1		-1.0	1.001	9	1 1		6

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### 6 24E-11 lbs/ft³ = 1 microgram/m mlcrogram/m3 = 40 9 x ppmv x M (STP)

100 molecular weight, TPHg Constant 3-801) Air Sparge Skie Tank Estimated Tank Blowe Sparge LS Transfer VLS Transfe Transfer Press Blowe LPC1 Waler LPC2 Water Transfer Effluent inlet HC olni ame Pressure Temp out Pressure Magnaheli wer Hou Blower Hou lydrocarbor Blower Outlet HC Pump Hour Pump Hour Pump Comments Meter ump Ho Totalize Pressure Removed нх into H> out H> Meter Pressure HX gauge lour Meter Meter Meter Discharge Dischq Meter (Vapor) (pre-dil) Pressure B-701 B-801 C-2201 P-401 P-501 P-5501 HO "H2O Ibs ppmv PSI PSI hrs hrs hrs hrs hrs hrs gal DSI psi DSI 965 NM NM 10.1 35 25.2 125 1 44 8 4,5 284 247 283 NM NM NM 9.7 6.5 4.5 398 361 397 1. 1,286 35 NM 17.9 140 4 44 9.8 17.2 42 6 4.5 401 364 400 1 1,287 NM NM 35 NM 115 4 10 45 420 383 419 1 1,394 NM NM 37 NM 16.4 125 6 45 4 448 411 447 1,740 NM NM 10 4.5 36 NM 16.3 120 4 43 5 471 1,799 NM 9.6 35 NM 31.8 120 7 43 5.0 472 435 NM 8 7.5 5.0 489 453 488 1,822 NM NM 9.8 36 NM 12.0 125 7 48 1 1 126 50 6,5 50 568 532 568 2,430 NM NM 9.9 36 NM 15.7 6 6.5 5.0 587 550 586 1 1 2,430 NM NM 10 125 6 52 36 NM 18.0 578 612 2,460 NM NM 9.8 NM 14.4 125 6 51 7.0 5:0 615 .1 1 36 5.0 634 597 631 1 1 2,462 NM NM NM sufficient water for pressure reading NM 17.3 118 7,5 41 6,0 36 623 656 2,462 NM NM NM 6.0 5.0 659 watthcient water for pressure reading 32 NM 15.0 118 6,5 41 NM NM NM 6,5 5.0 728 725 2,462 33 NM 12.8 120 6 42 692 ssufficient water for pressure readings. PID Readings taken. 11 31 NM 15,9 123 6 44 5.5 5.0 757 721 754 . 1 2,501 NM NM tempted to reduce dilution ar further, but persistent VFDW-8101 alarms prevented live. PID Readings taken 777 740 774 2,501 NM NM NM 34 NM 14,6 125 6 48 6.5 5.0 2 sufficient water for pressure readings 8.5 50 807 770 804 2,516 NM NM NM 33 16.2 125 8 46 2 sufficient water for pressure readings. NM 7.0 5.3 R32 795 829 1 2 2,516 NM NM NM 33 NM 14,5 125 6 48 mulficient water for pressure readings 6.5 5.5 898 861 895 1 2 2:516 NM NM 9.8 32 NM 15.2 115 6 44 8.0 5.0 923 886 920 2,533 NM NM NM sufficient water for pressure readings 32 NM 13.5 130 8 48 2,984 NM NM 6.1 8.5 5.0 909 943 educed stution or a bit on B-801. Tank trans pump prost wint down after switching discharge to direct drain (not to Baker Lank) 28 NM 16.5 125 9 50 946 2 3.309 7 ystem down upon arrival, restarted, epened dilution slightly on 801. Baker tank pumped out. Inf sample ports installed predibution for each bi 28 NM NM 128 5.5 963 926 960 NM -NM 9 45 7 2 5.5 966 929 963 3,385 NM NM 7 em down upon arrival, reatarted, opened dilution slightly on 801. AS missings taken, includual well PID Readings completed. Baker tank p 30 27 5 13,5 119 10 39 8.5 1 2 7 8.7 5.5 1035 998 1032 1 2 3,406 NM NM 5.2 stem operational upon arrival, Individual well PID Readings taken for 3/4 wells 30 NM 14.2 118 40 55 2 3,418 NM NM NM 8.0 1063 1026 1060 30 24.9 13 118 8 38 system operational upon arrival/departure. PID madings completed. AS well readings taken 3.823 NM NM 12 27 15.2 142 6 8.0 1229 1192 1227 3 ystem operational upon arrival/departure. 701 & 801 blowers reduced to 60% from 65%. Sparge compressor increased from 25% to 50% 25.7 8 49 1218 1252 13 3 4,318 NM NM 12 8.5 1255 m operational upon arrival/departure. 801 PID Readings completed Sparge readings completed. 801 VLS pump had lost its prime and we 32 22.8 13 145 7 56 6 4,352 NM NM 12 8,5 1274 1237 1272 2 13 10.7 55 3 ystem operational upon arrival/departure_Siemens carbon change for VPCs 1-1, 2-1, 3-1, & 3-2, 701 PID Readings completed_Precarbon v 31 18.6 144 9 6 5,377 NM 12 NM 31 18.2 11.1 141 7 85 1341 1304 1338 27 plann down upon arrival due to 101-VLS High-High This caused HT pump to stop, so the containment area was full as a result. Containmen 8 49 4 12 9,0 1366 1329 1364 27 5,728 NM NM stern down upon arrived due to a VFD-8202 PNL aterm. Didution air was excreased slightly on 801 blower. Compliance air samples were lake 32 17.5 7.9 141 8 47 4 1351 5,791 NM NM 12 32 10,7 6.2 144 9.5 47 9.0 1388 1385 27 stem operational upon arrival/departure. Monthly water samples were taken, 801 PID Readings were completed. NOTE: 801 VLS transfer pu 9 8.0 1473 1507 27 6,061 NM NM 12 9.5 56 10 1510 2 32 9.6 6.5 146 system operational upon arrival/departure 701 PID Readings were completed. 4 27 NM 12 1533 4 6,061 NM 10.2 8.6 172 59 8.5 8.0 1536 1499 gstent operational upon arrivat/departure. Elower VFDs were both reduced to 40%. Sparge VFD were increased to 80%. Dikution was decrea 24 9 12 1559 1522 1556 27 6,061 NM NM gatem operational upon annual/departure. Ditution was closed for both blowers. 601 PID Readings completed. 22 11.8 10.4 169 10 5B 9.0 8.0 4 NM 12 1653 27 6,888 NM System operational upon arrival/departure. Sparge readings taken. Attempted unsuccessfully to upload program to the PLC-model to contact IT : System down upon arrival due to a VFD-8202 PNL alarm (VFD alarm code CLF). System operational upon departure. 701 PID Readings were 21 10.7 10.8 165 10.5 57 8.0 8.0 1656 1619 6 NM NM 5,2 27 7,812 20 9.8 9.1 165 11 61 12.2 7.5 1694 1657 1691 6 PLC stern operational upon annual/departure 801 PID Readings were completed. 701 was raised to 45% power, 801 was raised to 40%. Both m 5.2 22.5 9,2 7.4 171 12 11.9 16.0 1742 1705 1739 28 6 8,477 NM NM device does not recognize PLC, all settings are locked by admin Skid Readings taken from PLC 65 5.2 System operational upon anival/departure. The 9 lateral wells on the 701 imprihed were closed 1/2 way. Monthly vapor and water compliance as System operational upon anival/departure. The lateral wells on 701 were closed 2/3 way. 701 was raised to 60% 801 was raised to 50%. Both 10 minutos. Compliance punch list was completed with the exception of the unistruit caps (ran out). Skief Readings taken from PLC 22 8 7.9 168 12 57 11.8 13.0 1816 1779 1813 28 7 10,088 NM NM NM NM 52 171 14 13.4 13.0 1907 1869 1904 -29 8 10,460 25 9,4 9.2 58 2 11,796 NM NM 5.2 12.6 15.5 2003 29 9 System operational upon arrival/departure, M9, M18, & M17 true union ball valves were tightened. Additional LOTO photos were taken for A&O. 24 9.4 10.2 176 13 54 2006 1969 NM 52 ystem operational upon anival/departure. 701 & 801 PID Readings were sompleted. Additional LOTO pics seven. Walted for PSCAA, but they ystem operational upon anival/departure. Westlakel SVE & Sparge wells were shut-off. 701 reduced to 50%, 801 elevated to 58%. Waited for 12.3 2051 2013 2048 2 29 9 12,039 NM 24.5 10 9.7 167 13 48 18 12,420 NM NM 5.2 15.0 2109 2143 30 om now on 15.7 12.8 182 .57 13,4 2146 24 14 9 13,728 NM NM 6.2 atem operational upon annvalideparture. 801 reduced to 50% (now both 701 & 801 are (8 50%), Breakthrough has reached over 10% in carb 15.T 14.5 2303 2337 30 10 23 22.1 16 1 193 15,5 62 2340 2 System operational upon arrival, system LOTO upon departure. System shull down for carbon replacement. 100 -System LOTO upon arrival. The tops were removed from the 3 primary carbon vessels. Evoqua changed out carbon and also removed the 4,00 yutarri was restarted. The system was operational upon departure. 5.8 2373 2408 30 14,011 NM NR4 23,5 13.3 200 15.5 68 15,4 26.0 2411 11 15,9 NM 5.9 57 12.5 8.5 2492 2526 30 11 14,093 NM stem operational upon anival/departure. Sparge readings were taken. FID readings were taken. Monthly vapor samples were collected, and w 175 13 2529 2 23.5 19.5 18.8 NM 62 30 NM 12.6 9.0 2697 2694 2 12 14,692 stern operational upon arrival/departure. Sparge /eadings were taken. Oil topped off in B-901 and B-701, Vac gauges on blower installes nee 24 20 22 175 13 60 2660 01 blower down upon arrival for high blower outlet temp. Alimn safe wara set at 120°F. The NM 6.2 2 30 12 14,967 NM ystem was operational upon departure. NOTE: Assemumeter was not functioning properly for flow measurements. 18.2 16.3 208 13 12.6 16.0 2843 2829 2864 24 88 8.4 8.0 8.1 190 13 7.9 80 210 13 8.5 3019 3054 15,623 tem operational upon arrival/departure. Vac gauges on blower intakes need to be replaced. Monthly vapor samples and water samples were 13 NM NM 13 3033 23 64 35 89 17.4 31 30 11 11

5/12

Rent arenipel

wer Samples taken (V-INF-701 801). PID was not operating property.
vicked up.
as found running dry, Reprimed=OK, Plumbling was modified to even cut [ ] to VPCs.
ater filter replaced.
pumped out, system restarted. Sparge manifold readings completed
h in addition to influent samples 701 PID Readings completed
ump is still losing its prime
sed to both blowers. Sparge readings were taken
for priveledges Skid Readings taken from PLC completed VFD for blower 801 nominal motor amp rating intreased from 11.6 to 14.0. Skid Readings taken from
Note are running at 0 Ampe with may peaks of 10.8 Ampe. Attempted unsuscent due to be of a sector to the DLC
to save running at e Anips, with max peaks or 10 e Arrips. Attempted unsuccessibility to upload program to the PLC-
angles were taken. Skid Readings taken from PLC
motors were running at 10.5 amps steadily. The sparge compressor was raced to 100% and the intervals were set to
documents Sparge readings were taken. Skid Readings taken from PLC
did ool show up. Skid Readings taken from PLC
FOLMM, saw mey and not show up. Small break through through primary carbons. Skid Readings taken from PLC
ion trains 1 & 3
Dibs. of carbon from the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the
valer samples were collected (NO FOG SAMPLES COLLECTED)
to be replaced.
sched80 PVC, which has an upper limit of 140°F, which is what both the 701 & 801 alarm setponts were set to
collected (likebother FOC + secondar)
De has Hell

SYSTEM LOG SHEET PHILLIPS 00 FACILITY #255353 000 Westlake Avenue ERI Job No. 03132603B

		_		-	1			1	-	1	-	VPC An	ay			T		1		1	1 1			_	DPE Sy	stem Skid	B-701)				-	DPES	yslom S
ale	Time	Name	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Stack 1	HC oul Stack 2	HC out Stack 3	Samples Collected?	VPC Line Drain Qty	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dll)	Blower Outlet HC	Magnahelic Gauge	Vac into VLS	Vac into Blower	Tem Blow Disc
			VPC-1	VPC-1 ft/min	VPC-1 SCFM	VPC-2 °F	VPC-2 ft/min	VPC-2 SCFM	VPC-3 °F	VPC-3 ft/min	VPC-3 SCFM	INF-1	INF-2 ppmy	INF-3	INT-1	INT-2	INT-3	DSCHG-1	DSCHG-2	DSCHG-3	Y/N	oal	"H-O	"H.O	"H.O	۴F	"H-0	DOMY	DDDDV	"H ₂ O	"H ₂ O	но	
2/27/2013	12:00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	V V	gai	0.08	26	20	78	37	NM	20.0	0.07	26	25	76
1/3/2014	12:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	0.5	0.0	0.0	0.0			0.00	26	31	80	37	NM	16.0	0.08	28	28	75
1/6/2014	16:45	EJB	NM	NM	NM	NM.	NM	NM	NM	NM	NM	NM	NM	NM	na	na	na	na	ne	na	n		0.06	28	32	78	37	NM	21.1	0.07	26	25	73
1/7/2014	11:30	EJB	72,0	5400	503,1	72.0	5210	485.4	71,1	4980	464.7	NM	NM	NM.	0.3	0.5	0.4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19.3	0.08	25	26	78
1/8/2014	16:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM.	NM.	NM	NM	0.2	0.3	0.4	0.0	0.0	0.0			0.04	18	21	77	38	NM	25.4	0.06	26	26	78
1/9/2014	16:00	EJB	71.0	5540	515.9	69.0	5310	496.4	68.0	5300	498.4	NM	NM	NM	0.2	0.3	1.0	0.0	0,0	0.0	n		0,04	22	25	76	38	NM	34.1	0.07	26	27	76
/10/2014	9.30	EJB	75.8	5600	517,4	73,3	5410	502.2	73.0	5690	528.5	NM	NM	NM	1,6	2.1	3.1	0.2	0.3	0.5	n		0,05	22	28	79	38	NM	20,6	0,07	27	29	7
/13/2014	16:40	EJB	80.2	5560	509.0	77,1	5780	532.2	76.2	5950	548,7	NM	NM	NM	1.0	1.4	3.2	0.5	0.0	0.9	n	-	0.05	22	26	82	37	NM	21.5	0.08	28	30	8
/14/2014	11:30	EJB	79.8	5430	497.4	77.0	5690	524,0	76.5	6000	553.0	NM	NM	NM	0.0	0.1	0.6	0.0	0.0	0.0	n		0.05	22	26	82	37	NM	20.2	0.08	27	32	8
/15/2014	15:20	EJB	81,3	5610	512.5	78.2	5590	513.6	77.1	5840	537.7	NM	NM	NM	0.0	0.5	3.6	0.4	0.7	0.0	n		0.04	23	27	83	37	NM	22.5	0:07	27.	33	8
/16/2014	10:15	NAG	72.9	5800	538.2	72.0	5750	533.0	72 8	5800	538.3	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0	n		0.04	24	28	76	37	NM	14.8	0.07	28	36	7
/17/2013	12:15	NAG	80.7	4850	441.1	77.3	4600	421.0	74.6	5050	464.5	NM	NM	NM	0.0	0.4	3.0	0.1	0.2	0.2	n	-	80.0	34	37	80	36	NM	36.5	0.12	44	51	B
20/2014	9:00	EJB	79.0	5000	458,7	76.2	4920	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.8	6.5	0.2	0.0	0.1	n	-	0,08	33	37	79	37	NM	37.9	0.11	44	59	8
21/2014	14:15	NAG	87.2	4800	429.9	83.2	5100	460.1	80.9	5150	466.6	NM	NM	NM	3.1	7.8	18.3	0.1	0.4	0.5	n		0.14	48	50	91	34	NM	42.8	0.17	53	65	8
/22/2014	10:30	EJB	80.0	4950	451.8	79.3	5060	462.4	81,1	5500	500.9	NM	NM	NM	0.0	22	11.5	0.0	0,1	02	n	_	0,14	42	48	88	36	NM	53.2	0.10	33	52	8
/23/2014	16:30	EJB	75.5	4560	418.2	74.B	4770	438,1	76.0	5150	471.9	NM	NM	NM.	0.0	2,5	12.5	0,1	0.2	0.2	n	-	0.14	40	48	85	34	NM	58,6	0.10	32	50	B
/24/2013	17.30	BLB	76.4	4720	432.2	75.5	4790	439,3	77,3	5250	479,9	NM	NM	NM	0.0	2.6	14.0	0.3	0.2	0.1	.0	-	0.14	41	49	85	34	NM	52.5	0.09	32	100	80
/27/2014	12.00	EJB	74.4	4710	431.9	74.2	4700	431.1	76.0	5200	475.4	NM	NM	NM	0.0	3.2	14.7	0.0	0,0	0.1	Y		0.12	41	50	84	33	NM	52.8	0,09	31	100	7
/28/2014	13:15	EJB	78.6	4830	439.5	77.8	4840	441.0	79.1	5230	475,4	NM	NM	NM	0_1	4_1	15,5	0.0	0.2	0,3	0		0.12	40	51	88	33	NM	43,5	0.09	31	50	8
/29/2014	10:40	EJB	85_1	5050	450.9	79.6	4510	406.8	77.5	5020	454.6	NM	NM	MM	0.2	4.4	13.0	0.1	0.1	0.1		-	0.14	44	55	88	31	NM	41.5	0,13	59	60	B
30/2014	14:45	NAG	83.4	5050	452.3	79.1	4800	433.3	76.0	4900	444,4	NM	NM	NM	0,1	3.1	10,1	0.0	0.0	0.0	V	-	0.15	44	54	85	31	NM	NM	0.17	56	61	8
31/2014	11:30	NAG	73.7	4700	429.6	71.2	4500	413.2	70,1	4500	414.1	14.2	19,7	25.8	0.0	1.9	7.0	0.0	0.0	0.0	n	-	0.15	46	57	80	31	34.4	27.3	0.13	47	56	78
/3/2014	00,0	EJB	77,3	5100	464,1	74.1	4700	430.2	74.2	5060	463.1	NM	NM	NM	0.0	3.7	10.3	0.0	0.0	0.0	0		.0,12	40	53	78	33	NM	45.1	0.12	48	52	78
/4/2014	13.00	NAG	77.3	4400	399,9	76.0	4625	421.4	76.0	4925	449	11.5	23.3	35.0	0,0	4.6	12.0	0,0	0.3	0.2	n	-	0_15	46	57	83	32	35,9	33.1	0.13	48	54	81
11/2014	11.00	NAG	0,09	5100	449,7	85.8	5000	444,3	82.9	5050	451	14.7	25.0	35.5	0.1	10_4	17.2	0.0	0.0	0.0	n	-	0.17	50	62	.87	29	35.5	37.6	0.15	51	58	86
12/2014	10:45	NAG	87.4	4900	438.4	87.7	5400	482.9	86.5	5400	484	29.3	24.5	24.5	0,1	13.1	21.0	0,0	0.0	0.8		-	0.16	47	.82	94	32,5	34.9	36,1	0.15	51	58	95
13/2014	13:30	NAG	82.7	4700	422.9	84.0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0.0	0,0	0.0	0.0	0.0	0.0		-	0.18	48	62	90	31	29.8	31.1	0.15	51	58	91
10/2014	12:00	NAG	81_1	4600	415.2 432.E	82.5	6200	427.8	82.7	5000	450	22.3	18,5	19.0	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0,19	51	66	90	31	28.7	27.1	0.15	52	56	90
20/2014	0.45	MAG	91.4	4800	432.5	91.4	5200	408,0	82.3	5400	44/	19,5	15.9	16.4	0.0	0.0	0.0	0,0	0,0	0,0	Y	-	0,19	49	63	89	31.5	25.6	26.0	0.14	49	55	BI
25/2014	12:00	EIB	99.9	4000	434.0	88.6	5600	400.7	99.6	5530	497	20.6	18.2	17.0	0.0	0.0	0.0	0.0	0.0	0.0			0.19	50	64	8/	32	26.0	30.4	0,18	49	58	Re
26/2014	14:00	NAG	88.1	4150	385.2	86.8	4500	305.5	86.5	4875	411	24.3	20.0	10.7	0.0	0.0	0,0	0,0	0.0	0.0			0.10	40	00	04	32	31.5	29.1	0.19	46	54	9.
27/2014	12:30	NAG	86.8	4100	359 1	88.3	4475	300 R	883	4800	410	23.2	10.1	10.8	0.0	0.1	0.1	0.0	0.0	0.0			0.19	48	70	91	24	20,0	32.4	0.23	03	3/	
/3/2014	14:00	NAG	85.2	3925	344.0	87.4	4375	381.8	86.8	4450	389	213	18.8	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0		0.74	50	53	00	23	24.3	27.5	0.30	62	65	9.
5/2014	12:00	EJB	85 B	3880	339.2	87.6	4250	370.4	87.4	4300	375	25.3	19.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0	n		0.19	50	53	91	22	30.4	34.8	0.25	67	73	QF
7/2014	13:00	NAG	92.2	4800	417.0	94.6	5475	473.8	94.0	5700	494	23.6	20.1	19.4	0.0	0.0	0.0	0.0	0.0	0.0	n		0.28	52	58	98	24	28.4	32.4	0.32	87	71	10
10/2014	15:30	NAG	89,5	4325	378.5	90.1	4775	415.2	89,5	4950	431	32.7	24.8	25.2	0.0	0,0	0,0	0.0	0.0	0.0	Y		0.34	65	68	97	22	31.2	44.7	0.34	71	74	10
4/2014	10,15	NAG	90,5	4580	400.7	91.0	4900	428.3	90,4	5300	464	31.4	23.8	23.7	0.0	0.0	0.0	0,0	0.0	0.0	n		0.48	70	73	99	25	34.3	38.4	0.47	73	77	10
8/2014	13:45	NAG	91.9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23,7	0,0	0,0	0,0	0,0	0.0	0.0	D		0.58	74	71	100	28	24.5	38.8	0.45	75	80	10
0/2014	10:30	NAG	90.1	4750	418.6	90.6	5000	438.2	90.8	5350	469	31,4	26.0	26.0	0.0	0.0	0,0	0.0	0.0	0,0	n	14	0,63	71	75	99	27	31.4	34.9	0,48	74	79	00
4/2014	10 00	NAG	96.0	4900	423,5	97.8	5500	473.8	97.6	5750	496	31,4	26.3	26.3	0.9	0.1	0.7	0.0	0.0	0.0	n		0,40	75	76	105	24	34.8	44.3	0.30	77	80	10
1/2014	12.00	NAG	92,4	4600	399.2	93.3	4950	428.9	93.0	5400	468	33.2	27.1	26.8	8.5	1.6	4.7	0,1	0.0	0.0	n		0.35	73	76	105	23	37.1	49.5	0.44	76	77	10
1/2014	10:00	EJB	-		-	-	-	-		-	-	+	-	-	-	*		+		-			1-4-1-	-	-	-	-	-		4			
1/2014	13:00	NAG	101.1	5075	434.4	102.5	5600	478.1	102.5	5900	504	18.2	18.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0			0.48	71	74	108	24	17.8	21.8	0.40	73	76	100
8/2014	11:15	EJB	04.2	4700	406.8	95,3	5750	496,7	94.6	5800	502	44,0	35.0	35.3	0,0	0,0	0.0	0.0	0.0	0.0	Y		0.18	72	-	102	23	38.2	40.1	0.32	74		10:
3/2014	11:00	EJB	91.3	4660	408.2	93,0	5350	464.9	93,1	5550	482	46	40	31	0	0	<u>n</u>	0	0	0	n		0.20	62		100	24	47	50	0.30	74	-	10
0/2014	12:30	NAG	113.5	NM	NC	114.2	NM	NC	114.0	NM	NC	39,4	32,3	32,7	0,0	0,0	0,0	0.0	0.0	0,0	n		0.59	73	74	119	24	48,3	53.1	0.23	73	75	11
2014	10:45	EJB	98,8	3020	336.3	100.2	4110	351.8	100.0	4250	364	25.2	21.0	20.4	0.0	0.0	0.3	0.0	0,0	0.0	Y		0.45	73	74	109	23	36.0	36.5	0.30	.75	78	110
2/2014	10:30	E./B	113.3	3825	319.9	115.1	4010	334,3	114.0	4145	348	26,0	20.5	21.0	0.0	0,0	0.0	0.0	0.0	0.0	11	1	0,40	73	73	124	23	37.0	37.2	0.22	74	75	124
	000		11/1/	6112730		117 6	10411	the second	115 (1	LIPA		27(1	116 3 11	007		A 11	1 07	1 1	( 1 ) I			I h	1 21	7/1	- 21		27	SN'L I	9110	0.0.4	7 11	-15	1 1

5/22

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# st 24E-11 lbs/ft⁹ = 1 microgram/m³

microgram/n3 = 40 9 x ppmv x M (STP)

						1							did	ir Sparge Sk	A				3-801)
Comment	Estimated Hydrocarbons Removed (Variar)	Tank Transfer Pump Discharge	LPC2 Water Pressure	LPC1 Water Pressure	Effluent Totalizer	Tank Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	Sparge Compressor Hour Meter	Blower Hour Meter	Blower Hour Meler	Magnahelic gauge	Pressure out HX	Temp out HX	Pressure into HX	Temp into HX	Blower Outlet HC	Blower Inlet HC	Press Blower Dischg
	(	Pressure				P-5501	P-501	P-401	C-2201	B-801	B-701								
	lbs	psi	psi	psi	gal	turs	hrs	hrs	hrs	hrs	hrs	"H _± O	PSI	°F	PSI	°F	vmqq	ppmv	"H ₂ O
		10.1	NM	NM	965	1	1	1	283	247	284	4.5	8	44	7	125	25.2	NM	35
		9,7	NM	NM	1,286	1	1	1	397	361	398	4.5	6.5	44	4	140	17.0	NM	35
		9,8	NM	NM	1,287	1	1	.1	400	364	401	4.5	6	42	4	115	17.2	NM	35
		10	NM	NM	1,394	1	1	1	419	383	420	4.5	6	45	4	125	16.4	NM	37
		10	NM	NM	1,740	1	1	1	447	411	448	4.5	5	43	4	120	16,3	NM	36
		9.6	NM	NM	1,799	1	1	- 4	471	435	472	5.0	8	43	7	120	31,8	NM	35
		0.0	NM	NM	1,822	1	1	- 1	488	453	489	5.0	7.5	48	7	125	12.0	NM	36
		0.0	NM	NM	2,430	I	1	1	568	532	568	5.0	6,5	50	8	128	15.7	NM	30
		10	NM	NM	2,430				588	550	587	5.0	6.5	52	6	125	18.0	NM	36
		9.8	NM	NM	2,460	1	1	1	612	578	815	5.0	7.0	51	6	125	14.4	NM	36
(filcen) water for pressure readings		NM	NM	NM	2,462				631	597	634	5.0	6.0	41	7.5	118	17.3	NM	36
riticeștă water for pressure readinge.		NIM	INM	INIM	2,402				705	023	059	5,0	0,0	41	6.5	118	15.0	NM	32
nnolent waar tee privlaarie maalings. Prill Heasangs läkelt.		NM	NM	NM	2,402	1			725	692	728	5.0	6,5	42	8	120	12.8	NM	33
ingues to resulce assign an further, but porticitient V+LTW-0101 atoms preventied (his. PID Readings taken.		11 NIM	NIM	NM	2,501	1		1	774	./21.	15/	5.0	5.5	44	6	123	15.9	NM	31
Ifficient water for pressure readings	1	NM	NM	NM	2,501	<i>k</i>			114	740	(11	5.0	8,5	48	6	125	14.6	NM	34
indeent water for pressure readings.		NIM	NIM	NM	2,510	2	_		804	705	807	5.0	8.5	45	8	125	16.2	NM	33
Riccent water for pressure readings		NM 0.0	NM.	NM	2,010	2			829	795	832	5.3	7.0	48	0	125	14,5	NM	33
		9.6	NIM	NM	2,018				000	801	BUR	5.5	0.0	44	0	115	15.2	NM	32
iniciani valle for pressore insulings		RI	NIM	NIM	2,033	2			042	086	923	5.0	e.c	48	8	130	13.5	NM	312
uced diuluon air a bil on 8-801 Tank dans pump press went down alter switching discharge to direct drain (not to Baker tank)		0.1	NIM	NIM	2,984	2			943	909	002	5.0	8.0	50	9	125	16.5	NM	28
ann aown upon annou, instannet, opened anuton alganiy an no 1, galler tank pumped out uit sampae ports installed predaution for each bi		7	NIM	NIM	3,309	2	-		083	820	603	5.5	0.5	45	9	128	NM	NM	28
en down doon anvaa, resurred, opened diadoon signuy on oo 1. AS readings taken, individual weer PID Readings completed. Baker rank		5.2	NIM	NIM	3,300	2	-	1	1022	909	1025	5.5	8.0	39	10	110	13.0	2/5	30
nnn operational visus arrivel, indervation with they reporting statement of an weath,		NM	NIM	NM	3,418		-	. 1	1080	1028	1063	5.5	80	20	0	110	14.2	14.0	30
am operational upon annual lengture 701 & 201 biogen polyced in 50% (non 5%). Source comparator increased free 25% to 50%		12	NM	NM	3,823	3	4		1227	1102	1220	8.0	8	49	8	142	15.7	24.9	27
min operational upon arrival/datarture. 801 PID Readings completed. Sparse readings completed 801 VI S pump had lost the same and		12	NM	NM	4 318	3	13		1252	1218	1255	85	8	58	7	145	12	22.9	20
en operational enon anical/decadure. Seminor carbon chance for VPCs 141 2.5 "bit & 5.2 "fot Pill Residence competition.		12	NM	NM	4 352	3	13	2	1272	1237	1274	8.5	8	55	0	144	10.7	19.6	21
em down upon arrival due to 801-VI. S High-High This caused HT numn to ston, so the containment area was full as a result. Containment		12	NM	NM	5.377	4	27	2	1338	1304	1341	85	7	49	a	141	11.1	18.2	31
em down upon arrival due to a VFD-8202 PNL alarm Dikution eir was increased skichliv on 801 blower. Compliance air sameles were tak		12	NM	NM	5,728	4	27	2	1364	1329	1366	9.0	7	47	8	141	7.9	17.5	32
em operational upon arrival/departure. Monthly water samples were taken. 801 PID Readings were completed. NOTE 801 VIS transfer		12	NM	NM	5,791	4	27	2	1385	1351	1388	9.0	9	47	95	144	6.2	10.7	32
em operational upon arrival/deperture. 701 PID Readings were completed		12	NM	NM	6.061	4	27	2	1507	1473	1510	8.0	10	58	9.5	146	6.5	9.6	32
em operational upon arrival/departure. Blower VFDs were both reduced to 40%. Sparce VFD were increased to 80%. Divution was decrea		12	NM	NM	6,061	4	27	2	1533	1499	1536	8.0	8.5	59	9	172	8.6	10.2	24
em operational upon annual/departure. Dilution was closed for both blowers. 801 PID Readings considered		12	NM	NM	6,061	4	27	2	1558	1522	1559	8.0	00	58	10	169	10.4	11.8	22
em operational upon arrival/departure. Sparge readings taken. Attempted unsuccessfully to upload program to the PLC-need to contact if		12	NM	NM	6,888	5	27	2	1653	1819	1656	8.0	8.0	57	10.5	185	10.8	10.7	21
em down upon arrival due to a VFD-8202 PNL alarm (VFD alarm code OLF). System operational upon departure. 701 PID Readings we		5.2	NM	NM	7,812	6	27	2	1691	1657	1694	7.5	12.2	61	11	165	9,1	9.8	20
em operational upon arrival/departure 801 PID Readings were completed 701 was raised to 45% power, 801 was raised to 40%. Both m not recognize PLC, all asthegt are locked by admin 5kkt Readings taken from PLC		5.2	NM	NM	8,477	6	28	2	1739	1705	1742	16.0	11.0	65	12	171	7.4	0.2	22.5
im operational upon antwatdigesture. The 9 latival wells on the 701 manifold were closed 1/2 way, Monthly sapor and weter compliance		5.2	NM	NM	10,088	7	28	2	1813	1779	1816	13.0	11.8	57	12	168	7.9	8	22
em operational upon arrival/departure. The lateral wells on 701 were closed 2/3 way, 701 was raised to 60%, 801 was raised to 50%. Boll tes, Compliance punch list was completed with the exception of the unistrut caps (ran out). Skid Readings taken from PLC		5.2	NM	NM	10,460	8	29	2	1904	1869	1907	13.0	13.4	58	14	171	9.2	0.4	25
em operational upon arrival/departure. M9, M16, & M17 true union ball valves were tightened. Additional I, OTO photos were taken for A&		5.2	NM	NM	11,796	9	29	2	2003	1969	2006	15.5	12.6	54	13	178	10.2	9.4	24
em operational upon arrival/departure 701 & 801 PID Readings were completed. Additional LOTO pics taken. Waited for PSCAA, but th		52	NM	NM	12,039	9	29	2	2048	2013	2051	18	12,3	48	13	167	9.7	10	24.5
em operational upon annval/departure. Westlake SVE & Sparge wells were shut-off 701 reduced to 50%, 801 elevated to 58%. Walted fo		5.2	NM	NM	12,420	0	30	2	2143	2109	2146	15.0	13,4	57	- 14	182	12.8	15.7	24
m operational upon amenideparture. 801 required to 50% (now both 701 & 101 and (3 50%). Breakitation thes reached over 10% in ca		6.2	NM	NM	13,728	10	30	2	2337	2303	2340	14.5	15,1	62	15.6	193	16.1	22.1	23
im operational upon anival, system LOTO upon departure. System stud down for carbon replacement.	1	-	14			-	-		-			-		-			-		
em LOTO upon arrival. The tops were removed from the 3 primary carbon vessels. Evoqua changed out carbon and also removed the 4,0 estarted. The system was operational upon departure.	3	5.8	NM	NM	14,011	11	30	2	2408	2373	2411	28.0	15.4	68	15,5	200	13.3	15.9	23.5
m operational upon annulideparture. Sparge readings were taken. PID readings were taken. Monthly vapor samples were collected, and		5.9	NM	NM.	14,093	-11	30	2	2528	2492	2529	8.5	12.5	57	13	175	18.8	19,5	23.5
m operational upon antival/departure. Sparge readings were taken. Oil topped off in B-801 and B-701. Vac gauges on blower Inlakes ne		8.2	NM	NM	14,692	12	30	2	2694	2660	2697	9.0	12.6	60	13	175	22	20	24
Nower down upon arrival for high blower outlet temp. Alarm setpoint was set at 120°F. The tempting factor for temperature extremes was the perational upon departure. NOTE: An emomenter was not functioning property for flow measurements.	1	6.2	NM	NM	14,967	12	30	2	2884	2829	2843	18.0	12.6	88	13.	208	18.3	18.2	24
m operational upon anivel/departure. Vac gauges on blower intakes meed to be replaced. Monthly vapor samples and water samples ver-		8.1	NM	NM	15,623	13	30	2	3054	3010	3033	9.0	13	64	13	190	8.1	8,0	23
m operational upon annval/departure. Vac partges on blower infailes need to be replaced. NOTE: Rented anomometer was used for th	5	8.4	NM	NM	15,830	13	30	2	3158	3121	3135	8.5	13.4	89	13	210	8.0	7.9	23
		12 1	-	-		13	20	7	2200	3350	7270	00	115	TE	17	100	10	11	78

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an. (V-INF-701, 801) PID was not operating property.	_
dry. Reprimed=OK. Plumbling was modified to even out [] to VPCs.	
4	
stem restarted. Sparge manifold readings completed	
Ruent samples 701 PID Readings completed	
Ils prime.	
	_
rs. Sparge readings were laken.	_
Skid Readings laken from PLC	
	m DI 7
for prover but nominal motor ampirating increased from 11.6 to 14.0. Skid Readings taken fro al 9 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully to upload program to the PL	C-device
n Skid Readings taken from PLC	_
ning at 10.5 amos sleadily. The sparce compressor was raised to 100% and the intervals were so	it to 10
and a second sec	
arce readings were laken. Skid Readings taken from PLC	
arge readings were taken. Skild Readings taken from PLC	1
arge readings were laken. Skid Readings Laken from PLC Skid Readings taken from PLC did not show up. Small breakthrough brough primary carbons. Skid Readings taken from PL	C from
arge readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC did not show up Small breakthrough through primary carbons. Skid Readings taken from PL	C from
arge readinge were laken. Skid Readings taken from PLC Skid Readings taken from PLC did not show up. Small breakthrough through primary carbons. Skid Readings taken from PL	C from
arge readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC did not show up Small breakthrough through primary carbons. Skid Readings taken from PL	C from
arce readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC / dd not show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the	C from
arge readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC y did not show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the lops were reinstalled and the	C from
arge readings were laken. Skid Readings Laken from PLC Skid Readings taken from PLC y did not show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the lops were reinstalled and the recollected (NO FOG SAMPLES COLLECTED).	C from system
arge readings were laken. Skid Readings Laken from PLC Skid Readings taken from PLC y did not show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the recelected (NO FOG SAMPLES COLLECTED).	C from system
arge readings were laken. Skid Readings Laken from PLC Skid Readings taken from PLC y did not show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the recollected (NO FOG SAMPLES COLLECTED). frich has an upper kinit of 140°F, which is what both the 701 & 801 elarm selpoints were set to 5	C from system System
area readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC y dd not show up. Small breakthrough through primary carbons. Skid Readings taken from PL orn the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the is collected (NO FOG SAMPLES COLLECTED). hich has an upper kmil of 140°F, which is what both the 701 & 801 elarm selpoints were set to S fing FOO samples). NOTE: Reinted anemometer was used for this visit.	C from system System
arce readings were laken. Skid Readings taken from PLC Skid Readings taken from PLC r dd not show up. Small breakbirough brough primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the a collected (NO FOG SAMPLES COLLECTED). hich has an upper limit of 140°F, which is what both the 701 & 801 alarm selpoints were set to S Ing FOO samples). NOTE: Rented anemometer was used for this visit.	C from system
wae readings were laken. Skid Readings taken <i>from PLC</i> Skid Readings taken from PLC dd nol show up. Small breakthrough through primary carbons. Skid Readings taken from PL om the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the a collected (NO FOG SAMPLES COLLECTED) high FOG samples), NOTE: Reinted ameniometer was used for this visit.	C from system

SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Westlake Avenue ERI Job No 03132603B

LITIODITO	0010200							1		-		VPC Arr	ay									1	-		DPE S	stem Skid (	(B-701)					DPE S	stem Ski
Date	Time	Name	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Stack 1	HC out Stack 2	HC out Stack 3	Samples Collected?	VPC Line Drain Otv	Magnahelic Gauge	Vac inlo VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Magnahelia Gauge	Vac into VLS	Vac into Blower	Temp Blowe Dische
2			VPC-1 °F	VPC-1 ft/min	VPC-1 SCFM	VPC-2 °F	VPC-2 ft/min	VPC-2 SCFM	VPC-3 °F	VPC-3 ft/min	VPC-3 SCFM	INF-1 ppmv	INF-2 ppmv	INF-3 ppmv	INT-1 ppmv	INT-2 ppmv	INT-3 ppmv	DSCHG-1 ppmv	DSCHG-2 ppmv	DSCHG-3 ppmv	Y/N	gal	"H ₂ O	"H ₂ O	"H,O	-yż	"H,O	ppmy	openv	"H,0	"H ₂ O	"H ₂ O	°F
12/27/201:	12:00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0,0	0.1	0.0	0.0	0,0	y.		0.08	26	20	78	37	NM	29.0	0.07	28	25	78
1/3/2014	12.30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0,5	0,5	0.0	0,0	0.0	n		0,06	26	31	80	37	NM	16.0	0.06	26	26	78
1/6/2014	16:45	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	па	na	na	na	na	na	n	-	0.08	28	32	78	37	NM	21.1	0.07	28	25	73
1/7/2014	11;30	EJB	72.0	5400	503.1	72.0	5210	485.4	71.1	4980	464.7	NM	NM	NM	0.3	0.5	0.4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19,3	0.06	25	28	78
1/8/2014	18:30	EJB	NM.	NM.	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.2	0.3	0.4	0.0	0.0	0.0	n	-	0.04	18	21	.77	38	NM	25.4	0,00	26	26	78
1/9/2014	18:00	EJB	71.0	5540	515.9	69.0	5310	496.4	68.0	5300	498.4	NM	NM	NM	0,2	0.3	1.0	0.0	0.0	0.0	n	-	0.04	22	25	78	38	NM	34.1	0.07	26	27	78
1/10/2014	9:30	EJB	75,8	5600	517.4	73.3	5410	502.2	73.0	5690	528.5	NM	NM	NM	1.6	2.1	3.1	0.2	0,3	0,5	n		0_05	22	26	79	38	NM	20.6	0.07	27	29	79
1/13/2014	15.40	E/8	80.2	5560	407.4	77.0	5780	524.0	76.5	5850	553.0	NM	NM	NM	10	0.1	3,2	0,5	0.8	0.9	0	-	0,05	22	28	82	37	NM	21.5	0.08	28	30	83
1/14/2014	15.20	EID	91.2	5430	512.5	78.9	5500	513.6	77.4	5840	537 /	NM	NM	NIM	0.0	0.5	3.0	0.0	0.0	0.0	<u>n</u>		0.05	22	26	82	37	NM	20.2	0.08	27	32	82
1/18/2014	10.15	NAG	72.9	5800	538.2	72.0	5750	533.6	72.8	5800	538.3	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0			0.04	23	27	83	37	NM	22.5	0.07	27	33	84
1/17/2013	12:15	NAG	80.7	4850	441.1	77.3	4600	421.0	74.6	5050	464.5	NM.	NM	NM	0.0	04	3.9	0.1	0.2	0.2	n		0.04	34	28	/D 90	3/	NM	14,8	0.07	28	36	
1/20/2014	9.00	EJB	79.6	5000	458.7	78.2	4920	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.8	8.5	0.2	0.0	0.1			0.08	33	37	70	37	NM	37.0	0.12	44	50	85
1/21/2014	14:15	NAG	87.2	4800	429.9	83.2	5100	460.1	80.9	5150	466.6	NM	NM	NM	3.1	7.8	16.3	0.1	0.4	0.5	n		0.14	46	50	91	34	NM	42.8	0.17	53	65	80
1/22/2014	10:30	EJB	80.0	4950	451.8	79.3	5060	462.4	81.1	5500	500_9	NM	NM	NM	0.0	2.2	11.5	0.0	0.1	0.2	n		0.14	42	48	88	36	NM	53.2	0.10	33	52	81
1/23/2014	16:30	EJB	75,5	4560	418,2	74.8	4770	438.1	76,0	5150	471,9	NM	NM.	NM.	0.0	2.5	12.5	0,1	0.2	0.2	n		0.14	40	48	85	34	NM	58.6	0.10	32	50	80
1/24/2013	17:30	EJB	76.4	4720	432.2	75.5	4790	439.3	77,3	5250	479.9	NM	NM	NM	0,0	2.6	14.0	0.3	0.2	0,1	.0		0.14	41	49	85	34	NM	52.5	0.09	32	100	80
1/27/2014	12:00	EJB	74.4	4710	431.9	74.2	4700	431.1	76.0	5200	475.4	NM	NM	NM	0,0	3.2	14.7	0.0	0.0	0.1	x	_	0.12	41	50	84	33	NM	52,8	0.09	31	100	77
1/28/2014	13:15	EJB	78.0	4830	439,5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM	0.1	4.1	15.5	0.0	0,2	0.3			0.12	40	51	88	33	NM	43.5	0.09	31	50	81
1/29/2014	10.40	EJB	85,1	5050	450.9	79.6	4510	406.8	77.5	5020	454.0	NM	NM	NM	0.2	4.4	13.9	0.1	0,1	0.1	n	-	0.14	44	55	88	31	NM	41,5	0.13	59	60	90
1/30/2014	14:45	NAG	83.4	5050	452.3	79.1	4800	433.3	76.6	4900	444.4	NM	NM	NM	0,1	3.1	10.1	0.0	0.0	0.0	¥	-	0.15	44	54	85	-31	NM	NM	0.17	56	61	88
1/31/2014	11:30	NAG	73.7	4700	429.6	71.2	4500	413.2	70.1	4500	414.1	14.2	19.7	25.8	0.0	1.9	7.0	0.0	0.0	0.0	n		0.15	46	57	80	31	34.4	27,3	0,13	47	5B	78
2/3/2014	90.9	EJB	77.3	5100	464_1	74.1	4700	430.2	74.2	5060	463,1	NM	NM	NM	0.0	3.7	10,3	0,0	0,0	0.0	n	-	0.12	40	53	78	33	NM	45,1	0.12	46	52	78
2/4/2014	13:00	NAG	77,3	4400	399.9	78.0	4625	421.4	76.0	4925	449	11.5	23.3	35.0	0.0	4.0	12.0	0.0	0.3	0.2		-	0.15	46	.57	83	32	35.9	33.1	0.13	48	54	81
2/11/2014	11:00	NAG	90.0	5100	449.7	85.8	5000	444.3	82.9	5050	451	14./	25.0	35.5	0.1	10.4	1/2	0,0	0.0	0.0	n		0.17	5.0	62	87	29	35,5	37.6	0.15	51	58	88
2/12/2014	12 20	NAG	87.4	4900	400,4	94.0	4800	402.9	83.6	5100	464	24.0	24,0	24.0	0.0	0.0	210	0.0	0.0	0.8			0.18	4/	62	94	32.5	34,9	30,1	0.15	51	58	95
2/13/2014	14.45	NAG	81.1	4600	415.2	82.5	4750	427 8	82.7	5000	450	22.3	185	10.0	0.0	0.0	0.0	0.0	0.0	0.0			0.18	64	62	90	31	29.8	31,1	0.15	51	58	- 01
2/19/2014	12:00	NAG	82.9	4800	432.5	82.9	5200	468.6	82.3	5400	487	19.5	15.9	16.4	0.0	0.0	0.0	0.0	0.0	0.0	v		0.19	49	63	80	31	26.6	27.1	0.15	52	58	90
2/20/2014	9:45	NAG	81.4	4800	434.0	81.4	5075	458.8	81,4	5500	497	22.3	17,1	16,8	0.0	0.0	0.0	0.0	0.0	0.0			0.19	50	64	87	32	28.8	30.4	0.14	49	59	85
2/25/2014	12:00	EJB	88,8	4920	438.8	68.6	5600	499.7	88.6	5530	493	20.6	18.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.17	48	66	94	32	31.5	29.1	0.19	46	54	93
2/26/2014	14.00	NAG	86.1	4150	365.2	86,8	4500	395.5	86.5	4675	411	24.3	20.0	19.7	0.0	0,0	0,1	0.0	0.0	0.0	0		0.19	49	68	91	24	25.9	32.4	0.23	53	57	92
2/27/2014	12:30	NAG	86.8	4100	359.1	88.3	4475	390.8	88.3	4800	419	23.2	19.1	19.6	0,0	0.1	0,1	0.0	0,0	0.0	0		0.20	50	70	90	23	26.1	31,3	0.30	63	70	95
3/3/2014	14:00	NAG	85.2	3925	344,0	87.4	4375	381.8	86.8	4450	389	21,3	18.8	18.7	0,0	0,0	0,0	0.0	0.0	0.0	n		0.74	50	53	90	22	24.3	27.5	0.32	62	65	94
3/5/2014	12.00	EJB	85.8	3680	339.2	87.6	4250	370.4	87.4	4300	375	25.3	19.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0			0.19	50	53	91	22	30.4	34.0	0.25	67	73	96
3/7/2014	13:00	NAG	92.2	4800	417.0	94.6	5475	473.6	94.0	5700	494	23.6	20.1	19.4	0.0	0.0	0.0	0.0	0,0	0.0	0	-	0.28	52	58	96	24	26.4	32.4	0,32	67	71	102
3/10/2014	15:30	NAG	89.5	4325	376.5	90.1	4775	415.2	89.5	4950	431	32.7	24.8	25.2	0.0	0.0	0.0	0.0	0.0	0.0	Y		0.34	65	68	97	22	31.2	44.7	0.34	71	74	100
3/14/2014	10:15	NAG	90.5	4580	400.7	91,0	4900	428.3	90.4	5300	464	31.4	23,8	23.7	0.0	0.0	0.0	0.0	0.0	0,0	n		0.48	70	73	99	25	34.3	38.4	0.47	73	77	100
3/18/2014	13:45	NAG	91.0	4700	410.2	92.2	5075	442.7	91.5	5300	463	292	23.5	23.7	0.0	0.0	0,0	0,0	0,0	0.0	n	-	0.58	74	71	100	26	24.5	38.8	0.45	75	80	100
3/20/2014	10:30	NAG	90,1	4750	416.8	90,6	5000	438.2	90.8	5350	489	31.4	26.0	26.0	0,0	0,0	0.0	0.0	0,0	0.0	- 0	-	0.63	71	75	89	27	31.4	34,9	0.48	74	79	99
4/1/2014	12.00	NAG	02.4	4900	423.5	03.1	4050	4/3.8	97.0	5400	490	314	20.3	20.3	0.9	1.0	47	0.0	0.0	0,0			0.40	75	78	105	24	34.8	44,3	0.30	77	80	106
4/02014	10:00	EIB	96.9	4000		93.4	4834	42,0,0			400		21.1		0,0	1.4		9.1	0.0	0.0			0.35	-73	78	105		37,1	49,5	0,44	74	77	105
4/11/2014	13:00	NAG	101.1	5075	434.4	102.5	5600	478.1	102.5	5900	504	18.2	16.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0			0.49	74	74	100	-	47.0		-	70		
4/16/2014	11:15	EJB	94.2	4700	406.8	95,3	5750	496.7	94.6	5800	502	44.0	35.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	Y		0.18	72		102	23	38.2	40.1	0.40	74	70	109
4/23/2014	11.00	EJB	91.3	4660	408.2	93,0	5350	464.9	03 1	5550	482	46	40	31	0	0	0	0	0	0	n		0.20	62	-	100	24	47	50	0.30	74	-	108
4/30/2014	12:30	NAG	113.5	NM	NC	114.2	NM	NC	114.0	NM	NC	39.4	32.3	32.7	0.0	0.0	0.0	0.0	0.0	0.0			0,59	73	74	119	24	48.3	53.1	0.23	73	75	118
5/8/2014	10,45	EJB	98,8	3920	336.3	100.2	4110	351.8	100,0	4250	364	25.2	21.0	20.4	0,0	0,0	0,3	0.0	0.0	0.0	Y		0.45	73	74	109	23	38.0	36.5	0,30	75	76	110
5/12/2014	16,30	EJB	113.3	3825	319.9	115.1	4010	334.3	114.9	4145	348	28.0	20.5	21.0	0,0	0.0	0.0	0.0	0.0	0.0	.0		0,40	73	73	124	23	37.0	37.2	0.22	74	75	124
5/22/2014	10.55	EJB	112.6	3800	318.2	113.5	3990	333,6	113.0	4100	343	27.8	20.4	20.7	9.3, 1	0.4	1.8	0.1	0,1	0.2	п	-	0.38	74	73	121	23	39.1	39.3	0.30	74	75	120
SIZT	10	43	111.0	MAD		111.5	33		110.4	4250		11.0	14.0	14.5	0.4	Out	1.1	0.1	0.1	0.2	n		.45	76	75	120	45	307	195	.30	75 -	75	117
		1		3860	)		4000																				1.				75		

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Conversions	6 24E-11	lbs/ft ³ = 1 microgram/n
Conversions	6 24E-11	lbs/ft' = 1 microgram/

microgram/m3 = 40 9 x ppmv x M (STP)

VLS Transfer Meter     Transfer Transfer Meter     Transfer Pressure     Effluent Pressure     LPC1 Water Pressure     LPC2 Water Pressure     Estimated Hydrocarbons Pressure     Estimated Hydrocarbons Pressure     Comments       P.401     P.501     P.5501     -     -     -     -     -       hrs     hrs     gal     psi     psi     jbis     -     -       1     1     965     NM     NM     10.1     -       1     1     1,286     NM     NM     97     -       1     1     1,286     NM     NM     97     -       1     1     1,394     NM     NM     98     -       1     1     1,394     NM     NM     10     -       1     1     1,740     NM     NM     2.0	LPC1 Wate Pressure	sfer Effluent Hour Totalizer er s gal	Tank Transfer Pump Hour Meter P-5501 hrs	VLS Transfer Pump Hour Meter P-501	VLS Transfer Pump Hour Meter	Sparge Compressor Hour Meter	Blower Hour Meter	Blower Hour Meter	Magnahelic gauge	Pressure out HX	Temp out HX	Pressure into HX	Temp into	Blower	ower nlet	Blowe Inlet	ress
Meer         Meer <th< th=""><th>1al ps) 65 NM 286 NM</th><th>ot s gal</th><th>P-5501 hrs</th><th>P-501</th><th>Meter</th><th></th><th></th><th></th><th>290</th><th>0001101</th><th>1.00</th><th>1110 1171</th><th></th><th>HC</th><th>HC</th><th>, HC</th><th>lower lischg</th></th<>	1al ps) 65 NM 286 NM	ot s gal	P-5501 hrs	P-501	Meter				290	0001101	1.00	1110 1171		HC	HC	, HC	lower lischg
hrs         hrs         gal         psi         psi         lbs           1         1         1         985         NM         NM         10,1           1         1         1,286         NM         NM         97         1           1         1         1,287         NM         NM         98         1           1         1         1,394         NM         NM         10         1           1         1         1,740         NM         NM         10         1	al psi 65 NM 286 NM	s gal	hrs	1	25401	C-2201	B-801	8-701		-				-	e-dil)	(pre-di	
1         1         985         NM         NM         10,1           1         1         1,286         NM         NM         97           1         1         1,287         NM         NM         97           1         1         1,287         NM         NM         98           1         1         1,394         NM         NM         10           1         1         1,740         NM         NM         10	65 NM		T. T	hrs	hrs	hrs	hrs	hrs	"H _a O	PSI	۴F	PSI	*F	ppmv	pmv	ppmv	но
1         1         1,286         NM         NM         97           1         1         1,287         NM         NM         9,8           1         1         1,394         NM         NM         10           1         1         1,740         NM         NM         10	NM	965	1	1	1	283	247	284	4.5	8	44	7	125	25.2	NM	NM	35
1         1         1,267         NM         NM         9,8           1         1         1,394         NM         NM         10           1         1         1,740         NM         NM         10           1         1         1,740         NM         NM         10	Luc IIII	1,286	1	1	1	397	361	398	4.5	6,5	44	4	140	17.9	NM	NM	35
1         1         1,394         NM         NM         10           1         1         1,740         NM         NM         10	287 NM	1,287	1	1	1	400	364	401	4.5	6	42	4	115	17.2	MM	NM	35
1 1 1 1,740 NM NM 10	394 NM	1,394	1	1	1	419	383	420	4.5	B	45	4	125	18.4	MM	NM	37
	740 NM	1,740	1	1	1	447	411	448	4.5	5	43	4	120	16.3	M	NM	36
	799 NM	1,799	1	1	1	471	435	472	5.0	<u>A</u>	43	7	120	31,8	MM	NM	35
<u>7 1 1 1,822 NM NM 9,8</u>		1,822	1		,	458	453	489	5.0	1.5	48		125	12.0		NM	36
	130 NM	2 430	1	1		586	550	587	5.0	0.0	52	0	120	18.0	NM .	NM	30
1 1 1 2460 NM NM 9.8	160 NM	2,460	1	1	1	612	578	615	5.0	70	51	6	125	14.4	IM	NM	36
1 1 2,482 NM NM NM insufficient water for pressure readings	162 NM	2,462	1	1	1	631	597	634	5.0	6.0	41	7.5	118	17.3	JM	NM	36
1 1 1 2,482 NM NM NM Insufficient water for pressure madings.	162 NM	2,462	1	1	1	656	623	659	5.0	8.0	41	6.5	118	15.0	IM	NM	32
1 1 1 2,482 NM NM NM Insufficient water for pressure readings. PID Readings taken	162 NM	2,462	1	1	1	725	692	728	5.0	0.5	42	0	120	12.8	M	NM	33
1 1 2,501 NM NM 11 Attempted to technice dilution or further, but persistent VEDW-8101 alarms prevented this PID Readings taken	01 NM	2,501	1	1	1	754	721	757	5.0	5.5	44	6	123	15.9	M	NM	31
1 1 2 Z,501 NM NM NM Insufficient water for plassare readings.	01 NM	2,501	2	.1	1	774	740	777	5.0	0.5	48	6	125	14.6	M	NM	34
1 1 2 2,518 NM NM NM Insufficient water for parsture readings.	16 NM	2,518	2	1	1	804	770	807	5,0	8.5	48	8	125	18.2	M	NM	33
1 1 2 2,516 NM NM NM Insuttition water for peasure readings.	16 NM	2,516	2	1	1	829	795	832	5.3	7,0	48	6	125	14,5	M	NM	33
1 1 2 2,516 NM NM 9,8	16 NM	2,516	2	1	1	895	861	898	5,5	6.5	44	6	115	15.2	IM	NM	32
1 2 2,533 NM NM NM Insufficient water for pressure readings	33 NM	2,533	2	1	1	920	886	923	5.0	8.0	48	8	130	13,5	M	NM	32
1 1 2 2,984 NM NM G.1 Reduced dilution air a bit on B-001. Tank trans pump greats want down after switching discharge to direct drain (not to Baker tank)	184 NM	2,984	2	4	1	943	909	946	5.0	8.5	50	9	125	18.5	IM	NM	28
1 1 2 3,309 NM NM 7 System down upon arrivel, restarted, opened dilution slightly on 801 Baker tank pumped out. Inf sample ports installed predilution for each blower, S	109 NM	3,309	2	1	1	960	926	983	5,5	7	45	0	128	NM	IM	NM	28
1 1 2 3,385 NM NM 7 System drym upon arrival restarted, opened dilution slightly on 801 AS readings taken, Individual weiß PID Readings completed. Baker lank picked	85 NM	3,385	2	1	1	963	929	966	5,5	8.5	39	10	119	13.5	7,5	27,5	30
1 1 2 3,408 NM NM 5.2 System operational upon arrival, individual well PID Readings laken for 3/4 wells	06 NM	3,406	2	1	1	1032	998	1035	5,5	8,7	40	7.	118	14,2	M	NM	30
1 1 2 3,418 NM NM NM System operational upon annual teperature. PID feadings completed AS well readings taken	18 NM	3,418	2	1	1	1060	1026	1063	5,5	0,8	38	a	118	13	1.0	24.0	30
1 3 3,823 NM NM 12 System operational upon arrival/departure, 701 & 801 blowers reduced to 60% from 55%. Sparge compressor increased from 25% to 50%	NM	3,823	3	1	1	1227	1192	1229	8,0	6	49	8	142	15,2	5.7	25.7	27
1 13 3 4,319 NM NM 12 system operational upon annwaldeparture, 601 PID Readings completed Sparce readings completed 801 VLS pump had lost Its prime and was four	19 NM	4,318	3	13	1	1252	1218	1255	8,5	6	50	7	145	13	2,8	22.8	32
2 13 3 4,352 NM NM 12 System operational upon arrival/departure Stemens carbon change for VPCs 1-1, 2-1, 3-1, & 3-2 701 PID Readings completed. Precarbon water fit	52 NM	4,352	3	13	2	1272	1237	1274	8.5	0	55	9	144	10.7	3,6	18,6	31
2 2/ 4 5,3// NMA NMA 12 System down upon amival due to #01-VLS High-High This caused HT pump to stop, so the containment area was full as a result. Containment pump		5,377	4	2/	2	1338	1304	1341	8,5	7	49	8	141	11.1	12	18,2	31
2 2/ 4 5,728 NM NM 12 System down upon arrival due to a VFD-8202 PNL atarm. Dilution air was increased slightly on 801 blower. Compliance air samples were taken in ad		5,728	4	21	2	1,364	1329	1368	9.0	1	41	B	141	7.9		17.5	32
2 27 4 6.061 NM NM 12 System consistence on an intervence on an intervence on the set of		6.081	4	27	2	1507	1331	1510	9.0	10	4/ 50	0.5	144	95	1	10.7	32
2 27 4 8.081 NM NM 12 Russim mersional upper available active adviser upper adviser upper available active adviser upper ad	61 NM	8 081	4	27	2	1533	1400	1536	80	8.5	59	0	172	8.6	2	10.2	4
2 27 4 6.061 NM NM 12 System operational upon antival description Date of both Numers ADI PID Baseline compaind	61 NM	6.061	4	27	2	1558	1522	1559	8.0	90	58	10	169	10.4	A	11.8	22
2 27 5 6.888 NM NM 12 System operational upon antival/departure. Sparce readings taken Attempted unsuccessfully to unded program to the PI Created to conjunct 17 for part	88. NM	6,888	5	27	2	1653	1619	1656	8.0	8.0	57	10.5	165	10.8	17	10.7	21
2 27 6 7,812 NM NM 5.2 System down upon arrival due to a VFD-8202 PNL alarm (VFD alarm code QLF) System operational upon departure 701 PID Readings were commo	12 NM	7,812	6	27	2	1691	1057	1694	7.5	12.2	61	11	165	9.1	.8	9.8	20
2 28 0 8,477 NM NM 5.2 System operational upon arrival/departure 801 PID Readings were completed 701 was raised to 45% power, 801 was raised to 40% Both motors ar does not recognize PLC, all settings are locked by admin Skild Readings taken from PLC	77 NM	8,477	6	28	2	1739	1705	1742	16.0	11.9	65	12	171	7.4	2	9.2	2.5
2 28 7 10,088 NM NM 5.2 System operational upon arrival/departure. The 9 lateral wells on the 701 manifold were closed 1/2 way. Monthly vapor and water compliance samples	88 NM	10,088	7	28	2	1813	1779	1816	13.0	11.8	57	12	168	7.9		θ	22
2 29 8 10,480 NM NM 5.2 System operational upon anival/departure The lateral wells on 701 were closed 2/3 way. 701 was raised to 80%. 801 was raised to 50% Both motor minutes. Compliance gunch ist was completed with the escaption of the unstant caps (ran col). Skill Readings taken from PLC	80 NM	10,460	8	29	2	1904	1869	1907	13.0	13.4	58	14	171	9.2	4	0.4	25
2 29 9 11,796 NM NM 5.2 System operational upon arrival/departure M9, M16, & M17 true union ball valves were lightened. Additional LOTO photos were taken for A⩔ docu	96 NM	11,796	9	29	2	2003	1969	2006	15.5	12.6	54	13	178	10.2	4 1	9.4	24
2 29 0 12,039 NM NM 5.2 System operational upon annuklioparture 701 & to1 PID Readings were completed. Additional LOTO pics taken. Wated for PSCAA, but they did no	30 NM	12,039	ö	29	2	2048	2013	2051	18	12.3	48	13	187	9.7	0	10	4,5
2 30 9 12,420 NM NM 5.2 now on.	20 NM	12,420	9	30	2	2143	2109	2148	15.0	13.4	57	14	182	12.8	7 1	15.7	24
2 30 10 13,728 NM NM 6.2 System operational upon annuloseparture. 801 recycled to 50% (new both 701.4.801 are of 50%) Breakthrough has reached over 10% in carbon tra	28 NM	13,728	10	30	2	2337	2303	2340	14,5	15.1	62	15.5	193	16.1	1 1	22.1	3
		-	-	-	-		-	~	-	~	-		-		-		-
2 30 11 14,011 NM NM 5.8 Organization and uso removed the 4,000s in the system was operational upon departure.	11 NM	14,011	11.	30	2	2408	2373	2411	26.0	15.4	68	15,5	200	13.3	0 1	15,0	3,5
2 30 11 14,003 NM NM 5.9 System operational upon arrival/departure. Sparge readings were taken. PID readings were taken. Monthly vapor samples were collected, and water s	03 NM	14,093	11	.30	2	2526	2492	2529	8.5	12.5	57	13	175	18,8	5 1	19.5	3.5
2 30 12 14,692 NM NM 6.2 System operational upon artival/departure. Sparge readings were taken. Od topped off in B-801 and B-701. Vac gauges on blower intakes need to be 701 blower down upon artival/departure. Sparge readings were taken. Od topped off in B-801 and B-701. Vac gauges on blower intakes need to be 701 blower down upon artival/departure. Sparge readings were taken. Od topped off in B-801 and B-701. Vac gauges on blower intakes need to be 701 blower down upon artival/departure.	92 NM	14,692	12	30	2	2694	2680	2697	9,0	12.6	60	13	175	22	0	20	4
2 30 12 14,967 NM NM 6.2 was operational upon decarture. NOTE: Anemometer was not functioning property for flow measurements.	67 NM	14,967	12	30	2	2884	2829	2843	16,0	12.0	88	13	208	16.3	.2 1	18,2	4
2 30 13 15,623 NM NM 8.1 System operational upon annual/departure. Vac gauges on blower intakies meet to be replaced. Monthly upon samples and water samples were collect	23 NM	15,623	13	30	2	3054	3019	3033	9.0	13	64	13	190	8.1	0 1	8.0	3
2 30 13 15,830 NM NM R.4 System operational upon nonvoldividation. Via gauges on blows intakes need to be replaced NOTE: Rented anemometer was used for this viail	30 NM	15,830	1.3	30	2	3158	3121	3135	8.5	13,4	89	13	210	8.0	9 1	7,9	3
and the second	61 NM	15,861	13	30	2	3390	3355	3370	9.0	12.5	75	13	198	6.8	6	0.6	3

es Lekken (VJNF-701, 8011 Pil) was notified to even nul [] to VPCs elsced A system restated. Sparge manifold readings completed yaing its prime. X0eren. Egarge readings vers taken.
es taken. (V.INF-701, 803). PID was notified to even out [] to VPCs es taken. (V.INF-701, 803). PID was notified to even out [] to VPCs placed. d. system restarted. Sparge manifold readings completed. paining its prime. Storems. Eperge readings were taken.
es taken. (V-JNF-701, 803). PID was not operating property.  es taken. (V-JNF-701, 803). PID was not operating property.  es taken. (V-JNF-701, 803). PID was not operating property.  es taken. (V-JNF-701, 803). PID was not operating property.  storem: started. Sparge manifold readings completed balance.  Source: Sparge readings were taken.
es laken (V-INF-701, 801). PID yes not operating property. es laken (V-INF-701, 801). PID yes not operating property. Ining dry. Readmed=OK. Plantbing was modified to even out [] [Io VPCs placed d. system restarted. Sparge menifold readings completed bang its prime. Storems. Sparge readings were laken.
es lakter. (V-INF-701, 801). PID yes not operating property. es lakter. (V-INF-701, 801). PID yes not operating property.
es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID yes not operating property.  es Laken (V-IN/F-701, 801). PID y
es laken (V-HNF-701, 801). PID yes not operating property. es laken (V-HNF-701, 801). PID yes not operating property.  ining day. Recorded=OK: Plumbling was modified to even out [] to VPCs placed  d. system restarted. Sparge manifold readings completed standard. stochem. Sparge readings were taken.
es Laken (V-HNF-701, 801). PID was not operating property. es Laken (V-HNF-701, 801). PID was not operating property.  ining day. Reprimed=OK. Plumbing was motified to even out [] to VPOs placed.  d. system restarted. Sparge manifold readings completed.  s to influent samples. 201 PID Readings completed.  Storem. Sparge readings were taken.
es Jakén (V-INF-701, 801). PID vers nol operating property. es Jakén (V-INF-701, 801). PID vers nol operating property.  Ining dry. Readmed=CK: Plumbling was modified to even out [] to VPCs placed  4. system restarted. Sparge manifold readings completed pulsing its prime.  Sparge readings vers taken.  Sparge readings vers taken.
es taken. (V-INF-701, 803). PID was not operating property. es taken. (V-INF-701, 803). PID was not operating property.  Ining day. Reextmed=OK. Plumbing was modified to even out [] to VPCs placed  I, system restarted. Sparge manifold reactings completed paing its prime. Sparge readings were taken.  Sparge readings were taken.
es taken. (V-INF-701, 803). PID was not operating property.  es taken. (V-INF-701, 803). PID was not operating property.  ining day. Revenmed=CK. Plumbing was modified to even out [] to VPCs placed.  d. system restarted. Sparge manifold readings completed baing its prime.  Sparge readings were taken.  Sparge readings were taken.
es taken. (V-INF-701, 801). PID was not operating property. es taken. (V-INF-701, 801). PID was not operating property.  Inling day. Reprinted=CK. Plumbling was modified to even gut [] to VPCs placed. It, system restarded. Sparge manifold readings completed outing its prime.  Sources. Sparge readings were taken.
es taken. (V-INF-701, 801). PID was not operating property. es taken. (V-INF-701, 801). PID was not operating property. aning day. Reprimed=CK. Plumbing was modified to even put [] to VPCs placed. It, system restarted. Sparge manifold readings completed. 3 to influent samples. 701 PID Readings completed. Dating its prime. Sources. Sparge readings were taken.
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es Jaken (V-IWF-701, 801). PID was not operating property. Ining dry Reprimed=OK Plumbling was modified to even out [ ] to VPCs elaced. It system restanted. Sparge manifold readings completed. Its system. Sparge readings were taken.
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es takan (V-INF-701, 801). PID was not operating property. nning dry. Reprimed=OK: Plumbing was modified to even out [] to VPCs placed. 4. system restarted. Sparge manifold reardings completed. 5 to influent samples_701 PID Readings completed. Solems. Sparge readings were taken.
es taken. (V-INF-701, 801). PID was not operating property. Ining dry. Reprimed=OK. Phimbling was modified to even out [] to VPCs placed. It system restarted. Sparge manifold readings completed. Is folloftwant samples. 701 PID Readings completed. Dating its prime. Solema. Sparge readings were taken.
es taken. (V-INF-701, 801). PID was not operating property. aning day. Reprimed=CK. Plumbing was modified to even put [] to VPCs placed. It, system restarted. Sparge manifold readings completed. 2 to Influent samples. 701 PID Readings completed. Dating its prime. Sources. Sparge readings were taken.
es taken. (V-INF-701, 803). PID was not operating property. aning dry. Reprimed=OK. Plumbing was modified to even out [] [Io VPCs placed It, system restarted. Sparge manifold readings completed osing its prime. Solema. Solema.
es taken. (V-INF-701, 803). PID was not operating property. ming dry. Reprimed=OK. Plumbing was modified to even out [] [Io VPCs placed ut system restarted. Sparge manifold readings completed osing its prime. Sparge readings were taken.
es taken. (V-INF-701, 803). PID was not operating property.
aning dry Reprimed=OK. Plumbing was modified to even put [] to VPCs placed JL system restarted. Sparge menifold readings completed > to influent samples. 701 PID Readings completed. > to influent samples. 701 PID Readings completed. > sources. Sources. Sparge readings were taken.
ning dry. Reorimed=CK. Plumbing was modified to even ou! [] to VPCs placed II, system restarted. Sparge manifold readings completed. I lo influent samples. 701 PID Readings completed. osting its prime.
ning dry. Reprimed=OK. Plumbling was modified to even out [] to VPCs daced. IL system restarted. Sparge menifold readings completed. Io influent samples. 701 PID Readings completed. osing its prime.
ning dry. Reprimed=CK. Plumbing was modified to even out [ ] to VPCs placed II, system restarted. Sparge manifold readings completed. II o influent samples. 701 PID Readings completed. osing its prime.
ning dry. Reprimed=CK. Plumbing was modified to even out [ ] to VPCs placed If system restarted. Sparge manifold readings completed. I to influent samples. 701 PID Readings completed. osing its prime.
ning dy. Reprimed=OK. Plumbing was motified to even out [] to VPCs placed //, system restarted. Sparge manifold readings completed 2 lo influent samples. 701 PID Readings completed tosing its prime. Sovers. Sparge readings were taken.
placed ul, system restarted. Sparge manifold readings completed n to Influent samples. 701 PID Readings completed (resting its prime. Solvers. Sparge readings were taken.
ul, system restarted. Sparge manifold readings completed. 2 lo influent samples. 701 PID Readings completed. Iosing its prime. Soulers. Sparge readings were taken.
t fo influent samples. 701 PIQ Readings completed. Osting its prime. Skolers. Spanja readings were taken.
ng minimit an angles. COLLEND FRANKINGS LASINGSHAL Daling its prime. Skiwers. Spanja readings were Leken.
oung its prime. Skowern: Spanja readings were laken.
Skovern. Spanja readings were laken.
Sovers. Sparpe readings wen teken
pes, Skid Readings taken from PLC
VFD for blower 801 nominal molor amp rating increased from 11.6 to 14.0. Skid Readings taken from PLC
ining at 9 Amps, with max peaks of 10.8 Amps. Attempted unsuccessfully to upload program to the PLC-device
Inter Child Bandians Inter from DLD
a running at 10.5 amps steadily. The sparge compressor was raised to 100% and the intervals were set to 10
s. Sperge readings were taken. Skid Readings taken from PLC
w up. Skit Readings taken from PLC
It mey did not snow up. Small break offough infough primary carbons. Skid Keadings taken from PLC from
43.
bon from the last changeout from the site. Upon Evoqua's departure, the tops were reinstalled and the system
es were collected (NO FDG SAMPLES COLLECTED)
ced. VC, which has an upper kmil of 140°F, which is what holh the 701 & 801 plann catronine were cal to Surface.
ncluding FOG samples). NOTE: Rented anomometer was used for this visit.
ons to blows plakes need to be retrieved NOTF I New Owner anomometer was used for this visit
AND AN AND A MARKET HIS A PARTY AND
0.0.11
were bollters
burnet to IEmi-

03132603B Field Dala log 140522 5/27/2014

SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Westlake Avenue ERI Job No 03132603B

T	-	_	(C	1	1	í	1	1	T	í		VPC Am	y.	ķ	1			Ť	1 1				-	r	DPE Sy	stem Skid	(B-701)			-		DPES	ydem S
tate Tir	me Na	lame	Stack Air Temp	Stack Air Velocity	Flowrate	Stack Air Temp	Stack Air Ve <del>l</del> ocity	Flowrate	Stack Air Temp	Slack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Stack 1	HC out Slack 2	HC out Stack 3	Samples Collected?	VPC Line Drain Oly	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Magnahelic Gauge	Vac into VLS	Vac into Blower	Ten Blo⊮ Disc
			VPC-1	VPC-1 ft/min	VPC-1 SCFM	VPC-2	VPG-2 ft/min	VPC-2 SCFM	VPC-3 °F	VPC-3 ft/min	VPC-3 SCFM	INF-1 ppmv	INF-2 ppmv	INF-3 ppmv	INT-1 ppmv	INT-2 ppmv	INT-3 ppmv	DSCHG-1 ppmv	DSCHG-2 ppmv	DSCHG-3 ppmv	Y/N	gal	"H ₂ O	"H ₂ O	"H ₂ O	<b>۴</b> .	"H ₂ O	ppmv	ppmy	°H ₂ O	"H O	"H_0	
12/27/2013 1:	12:00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	y.	_	0.08	26	29	78	37	NM	29.9	0.07	26	25	78
1/3/2014 14	2:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	05	0.0	0.0	0.0	n		0.06	28	31	80	37	NM	16.0	0.06	26	26	71
1/0/2014 10	6;45	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	na	na	na.	na	na	na	n		0.06	28	32	78	37	NM	21.1	0.07	26	25	7:
1/8/2014 16	6:30	FJB	NM	5400 NM	503.1 NM	12.0 NM	5210 NM	485.4 NM	71.1 NM	4980 NM	464.7 NM	NM	NM	NM	0.3	0.5	0,4	0.0	0.0	0.0	n		0.03	18	22	78	38	NM	19.3	0.06	25	26	7
/0/2014 10	6:00	EJB	71.0	5540	515.9	69.0	5310	496.4	68.0	5300	496.4	NM	NM	NM	0.2	0.3	1.0	0.0	0.0	0.0	n		0.04	22	25	76	38	NM	34.1	0.07	26	25	7
10/2014 9	9;30	EIB	75,8	5600	517.4	73,3	5410	502.2	73.0	5690	528,5	NM	NM	NM	1.6	21	3.1	0.2	0.3	0.5	n	(-1)	0.05	22	26	79	3.9	NM	20.6	0.07	27	29	7
13/2014 16	6.40 1	EJB	80.2	5560	509.0	77.t	5780	532.2	76.2	5950	548,7	NM.	NM	NM	1.0	1,4	3.2	- 0.5	0.8	0.9	n	-	0.05	22	26	82	37	NM	21.5	0.08	26	30	1
14/2014 11	1:30 8	EJB	79,8	5430	497.4	77.0	5690	524.0	76,5	6000	553,0	NM	NM	NM	0,0	0,1	0.6	0.0	0.0	0.0	π	-	0.05	22	26	82	37	NM	20.2	0.08	27	32	1
6/2014 10	0.15	NAG	72.0	5800	538.2	78.2	5750	513.6	77,1	5840	537.7	NM	NM	NM	0.0	0.5	3,6	0.4	0.7	0.6	n	-	0.04	23	27	83	37	NM	22.5	0,07	27	33	E
7/2013 12	2:15 N	NAG	80.7	4850	441.1	77,3	4600	421.0	74.6	5050	464.5	NM	NM	NM	0.0	0.4	3.9	0.0	0.2	0.2	0		0.04	34	37	80	37	NM	14,8	0.12		51	
0/2014 9.	9.00 E	EJB	79,6	5000	456.7	76.2	4920	452.2	74.2	4940	455,7	NM	NM	NM	0,0	0.8	6.5	0.2	0.0	0,1	n		0.08	33	37	79	37	NM	37.9	0.12	44	59	1
1/2014 14	4.15 N	NAG	87.2	4800	429.9	83.2	5100	460_1	80.9	5150	466.0	NM	NM	NM	3.1	7,8	16,3	0,1	0.4	0,5	n		0.14	46	50	91	34	NM	42.8	0.17	53	65	8
/2014 10	0:30 E	E./B	80.0	4950	451.B	79.3	5060	462.4	81.1	5500	500.9	NM	NM	NM	0.0	22	11.5	0.0	0.1	0.2	n	_	0.14	42	48	AB	36	NM	53.2	0.10	33	52	1.
2014 16	6;30 E	EIB	75.5	4560	418.2	74.8	4770	438.1	76.0	5150	471,0	NM	NM	NM	0.0	2.5	12,5	0.1	0,2	0.2	n	1	0.14	40	48	85	34	NM	56.6	0.10	32	50	-
/2013 17	2.00 6	EJB	74.4	4720	432.2	74.2	4790	439.3	76.0	5250	479.9	NM	NM	NM	0.0	2.6	14.0	0.3	0.2	0.1	n		0.14	41	49	85	34	NM	52.5	0.09	32	100	H
/2014 13	3.15 E	EJB	.78.6	4830	439.5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM	0,1	4.1	15.5	0.0	0.2	0.3	О		0.12	41	51	88	33	NM	43.5	0.09	31	50	
/2014 10	0.40 E	EJB	85.1	5050	450.0	79.6	4510	406.8	77.5	5020	454.0	NM	NM	NM	0.2	4.4	13.9	.0.1	0,1	0,t	п		0.14	44	55	88	31	NM	41.5	0.13	59	69	
/2014 14	1:45 N	NAG	83.4	5050	452.3	79.1	4800	433,3	76,6	4900	444,4	NM	NM	NM	0,1	3,1	10.1	0.0	0.0	0,0	Y	_	0.15	44	54	85	31	NM	NM	0.17	56	61	1
2014 11	1:30 N	AG	73.7	4700	429,6	71.2	4500	413.2	70.1	4500	414.1	14,2	19.7	25.8	0.0	1.9	7.0	0.0	0.0	0.0	n	-	0,15	46	57	.80	31	34,4	27.3	0,13	47	56	-
014 0.0	00 E		77,3	5100	464,1	74.1	4700	430.2	74.2	5060	463.1	NM	NM	NM	0.0	3,7	10.3	0.0	0.0	6,0		-	0.12	40	53	78	33	NM	45.1	0.12	46	52	-
014 11	00 N	IAG	90.0	5100	440.7	85.0	4625	421.4	82.0	5050	449	11.5	23,3	35.0	0.0	4,6	12.0	0,0	0.3	0,2	n		0.15	48	57	83	32	35.0	33 1	0,13	48	54	H
014 10	45 N	AG	87.4	4900	438,4	87 7	5400	482.0	86.5	5400	484	29.3	24.5	24.5	0,1	13.1	21.0	0.0	0.0	0.8	n		0.16	47	62	94	32.5	34.0	36.1	0.15	51	56	E
2014 13:	30 N	AG	82.7	4700	422,0	84.0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.18	48	62	90	31	29.8	31.1	0.15	51	58	5
014 145	45 N	AG	81.1	4600	415.2	82.5	4750	427.6	82,7	5000	450	22.3	18.5	19,0	0.0	0.0	0,0	0.0	0.0	0.0	n		0.19	51	66	90	31	28.7	27.1	0.15	52	56	5
014 121	00 N	IAG	82,9	4800	432.5	82.0	5200	468,6	82.3	5400	487	19,5	15.9	16.4	0,0	0,0	0.0	0.0	0.0	0,0	У.		0_19	49	63	89	31.5	25.6	26.0	0,14	49	55	1
2014 9.4	45 N		81.4	4800	434.0	81.4	5075	458,8	81.4	5500	497	22.3	17.1	16.8	0,0	0.0	0,0	0.0	0.0	0.0	n	- 1	0.19	50	64	87	32	26,8	30.4	0.18	49	58	1
014 14:0	00 N/	AG	86.1	4150	365.2	86.8	4500	395.5	86.5	4675	493	24.3	20.0	19.7	0.0	0.0	0.1	0.0	0.0	0.0	n 0.		0.17	48	66	01	32	31.5	29.1	0.19	52	54	
014 12:3	30 N/	AG	86.8	4100	359_1	88,3	4475	390.8	88.3	4800	419	23.2	19.1	19.8	0.0	0.1	0.1	0.0	0.0	0.0	n		0.20	50	70	90	23	26,1	31.3	0.30	63	70	
14 14:0	00 N/	AG	85.2	3925	344.0	87.4	4375	381.8	86.8	4450	389	21.3	18.8	18.7	0.0	0.0	0.0	0.0	0.0	0.0	n		0.74	50	53	90	22	24.3	27.5	0.32	62	65	E
014 12.0	00 E.	JB	85,8	3880	339.2	87.6	4250	370.4	87.4	4300	375	25.5	19,8	20.0	0.0	0,0	0.0	0.0	0.0	0.0	n		0.19	50	53	91	22	30,4	34,8	0.25	67	73	6
014 13:0	00 NA	AG	02.2	4800	417.0	94.0	5475	473.6	94.0	5700	494	.23.6	20.1	19,4	0,0	0.0	0.0	0.0	0.0	0.0	.n	-	0.28	52	56	06	24	26.4	32.4	0.32	67	71	1
014 10:1	15 NA	AG	90.5	4580	400.7	91.0	4900	415.2	90.4	5300	464	32.7	24.8	25.2	0.0	0.0	0.0	0.0	0,0	0,0	Y	-	0,34	65	68	97	22	31.2	44,7	0.34	71	74	1
014 13.4	45 NA	AG	91.9	4700	410,2	92.2	5075	442.7	91.5	5300	463	29.2	23,5	23.7	0.0	0.0	0.0	0.0	0.0	0.0	n		0.58	74	71	100	25	24.5	38.8	0.47	75	80	1
014 10.3	30 NA	AG	90.1	4750	416.6	90,6	5000	438.2	90.8	5350	469	31.4	26.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.63	71	75	99	27	31.4	34.9	0.48	74	79	4
014 10.0	00 NA	AG	96.0	4900	423.5	97,8	5500	473,8	97.6	5750	496	31.4	26.3	26.3	0.9	0.1	0.7	0,0	0.0	0.0	n		0.40	75	76	105	24	34.8	44,3	0,30	77	80	1
14 12:0	00 NA	AG	92.4	4600	399.2	93,3	4950	428.9	93.0	5400	468	33.2	27.1	26.8	6.5	1.0	4,7	0,1	0.0	0.0	n	-	0.35	73	76	105	23	37.1	49,5	0.44	74	77	11
14 10:0		AG	101.1	5075	434.4	102.5	5600	478-1	102.5	5000	504	182		16.0	-	-	-	-	-	-		-	-	-		-	-						-
014 11:1	15 EJ	JB	94.2	4700	406.8	05.3	5750	496.7	94.6	5800	502	44.0	35.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	n Y		0.48	71	74	108	24	17.8	21.8	0.40	73	76	10
114 11:0	00 EJ	ю	91,3	4660	408.2	93,0	5350	464.9	93.1	5550	482	46	40	31	0	q	Q	Ø	0	0			0.20	62		100	24	47	50	0.30	74	-	10
14 12:3	30 NA	IG	113.5	NM	NC	114.2	NM	NC	114.0	NM	NC	39,4	32.3	32.7	0.0	0.0	0.0	0,0	0.0	0,0	n		0,59	73	74	119	24	48.3	53,1	0.23	73	75	1
14 10:4	45 EJ	JB	98.6	3920	336.3	100,2	4110	351.8	100.0	4250	364	25.2	21.0	20,4	0.0	0.0	0.3	0.0	0.0	0.0	Y	-	0,45	73	74	109	23	36,0	36.5	0.30	75	76	13
14 16:34	30 E.J	18	113,3	3825	319.9	115,1	4010	334.3	114.9	4145	346	26.0	20.5	21.0	0.0	0.0	0,0	0.0	0.0	0.0	0	-	0.40	73	.73	124	23	37.0	37.2	0,22	74	76	12
14 10:55		ia.	112.6	3800	318.2	113.5	3900	333.6	113,0	4100	343	27.8	20.4	20.7	0.3	0.4	1.8	0.1	0,1	0.2		-	0.38	74	73	121	23	39,1	39.3	0.30	74	75	12
111	OD A	3	1	31	1995 Y	V	1	04410	11/4	4200	302	1	1	1	0.5	0.6	19	0.0	0.0	0.1	n		B.4m	IT	76	119	24.5	30.7	319	35	68	69	11
14	7	10	1)7.5	3940	10-	734	950		107.4	44	50	3.5	17.0	17	4				U.				1			1. 1.					00		-1-

Commessions 6 2	4E-11 lbs/ft ³ = 1 microgram/m ³
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microgram/m3 = 40 9 x ppmv x M (STP)

			1					T									Constant	100	2 molecular weight, TPHg
3-801)	_		-	1	Air Sparge S	skid	1	-		1	-	1	à		1	1	Tank		
Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Temp into HX	Pressure into HX	Temp out HX	Pressure out HX	Magnahelic gauge	Blower Hour Meter	Blower Hour Meter	Sparge Compressor Hour Meter	VLS Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	Tank Transfer Pump Hour Meter	Effluent Totalizer	LPC1 Waler Pressure	LPC2 Waler Pressure	Transfer Pump Discharge Pressum	Estimated Hydrocarbor/s Removed (Vapor)	Comments
-140	-	-	*e	DEI	75	Del	78.0	B-701	B-801	G-2201	P-401	P-501	P-5501						
	pprive	ppine	405			FOI	1120	1115	047	103	185	1115	tirs	uar oos	psi	psa	psi	105	
30	NINA	170	140		44	0	4,0	209	281	203				1.006	NM	NM	10.1		
35	NM	17.3	115	4	44	0.2	4.0	401	364	397				1,200	NM.	NM	97		
30	NIM	15.4	125	4	42	0	4.5	401	304	400				1,204	NM	NM	9.8		
36	NM	16.3	120	4	49	5	4.5	420	411	447	1	1	-	1.740	NM	NIM	10		
36	NIM	31.8	120	7	43	9	50	490	435	417				1,740	NIM	NIM	0.0		
36	NM	12.0	125	7	48	75	5.0	489	453	488			-	1,822	NIM	NIM	0.0	11.000	
36	NM	15.7	126	a	50	85	50	568	532	568	1		1	2 430	NM	NM	90		
36	NM	18.0	125	6	52	6.5	5.0	587	550	586	4	1	4	2.430	NM	NM	10		
36	NM	14.4	125	6	51	7.0	5.0	615	578	612	4	4	4	2,460	NM	NM	9.8		
36	NM	17.1	118	7,5	41	6.0	5.0	634	597	631	1	1	1	2,462	NM	NM	NM	2000	Insufficient weier for pressure readings
32	NM	15.0	118	6.5	41	6.0	5.0	659	623	656		1	1	2,462	NM	NM	NM	1	Insufficient water for pressure readings
33	NM	12.8	120	6	42	6.5	5.0	728	692	725	1	1	1	2,462	NM	NM	NM		Insufficient water for pressure readings. PID Readings taken
31	NM	15.9	123	6	44	5,5	5.0	757	721	754	1	1	1	2,501	NM	NM	- 11		Attempted to reduce dilution air further, but persisted VFDW-8101 alarms prevented this. PID Readmos beam
34	NM	14.5	125	6	48	6.5	5.0	777	740	774	1		2	2,501	NM	NM	NM		insufficient water for pressure readings
33	NM	16.2	125	ß	46	8.5	5.0	807	770	804	1	1	2	2,516	NM	NM	NM		Insufficient water for pressure readings
33	NM	14.5	125	6	48	7.0	5,3	832	795	829	1	4	2	2,516	NM	NM	NM		Insufficient water for pressure reasings
32	NM	15.2	115	0	44	6.5	5.5	898	861	895	1	4	2	2,516	NM	NM	9.8		
32	NM	13.5	130	8	48	8.0	5.0	923	886	920	Y.		2	2,533	NM	NM	NM		Insufficient water for prensure readings
28	NM	16.5	125	9	50	8,5	5.0	946	909	943	1	1	2	2,984	NM	NM	6.1		Reduced disiden air a bit on 8-801. Tank trans pump press went down after switching discruzge to direct drain (not to Beker tank)
28	NM	NM	128	9	45	7	5.5	963	926	960	1	1	2	3,309	NM	NM	7		System down upon arrival, restarted, opened dilution slightly on 801. Baker tank pumped out, lief sample ports assialed prediction for each blower. Bamples taken (V-444
30	27,5	13.5	119	10	39	8.5	5.5	966	929	963		i	2	0,385	NM	NM	7		System down upon errivel, restarted, opened dikulion slightly on 801. AS readings taken, Individual well PID Reedings completed. Bakar tank pickad up
30	NM	14.2	118	7	40	8.7	5,5	1035	998	1032	1	1	2	3,400	NM	NM	5.2	1	System operational upon arrival, Individual well PID Readings taken for 3/4 wells.
30	24.9	13	118	8	38	0.0	5.5	1063	1026	1060	3	1	2	3,418	NM	NM	NM		System operational upon annual/departure. PID reactings completed: AS well readings taken
27	.25,7	15.2	142	.8	49	6	8.0	1229	1192	1227	1	1	3	3,823	NM	NM	12		System operational upon aniival/departure. Y01 & 101 blowers reduced to 00% from 05%. Sparge compressor increased fram 25% to 50%.
32	22.8	13	145	7	56	6	B.5	1255	1218	1252	1	13	3	4,318	NM	NM	12		system operational upon aminWolopinture 801 PID Readings completed. Sparge readings completed, 801 VLS pump had loci its prime and was found running dry, Repo
31	18.6	10,7	144	9	55	0	8.5	1274	1237	1272	2	13	3	4,352	NM	NM	12		System operational upon arrival/departure Stemens carbon change for VPCs 1-1, 2-1, 3-1, & 3-2, 701 PID Readings completed Precarbon water filter replaced
31	18.2	31.1	141	8	49	7	8.5	1341	1304	1338	2	27	4	5,377	NM	NM	12		System down upon univer due to 601-VLS High High This caused HT purce to stop, so the containment area was full as a nesult, Containment purpoid out, system resolu-
32	17.5	7.9	141	6	47	7	9.0	1366	1329	1364	2	27	4	5,728	NM	NM	12		System down upon anwel due to a VFD-8282 PNI, eleven. Difution as wes increased stightly on 801 blouer. Compliance an samples were taken in adduce to influent som
32	10.7	6.2	144	9,5	47	9	9.0	1388	1351	1385	2	27	4	6,791	NM	NM	12		System operational upon univel/departure. Monthly water samples were taken, bolt PID Readings were completed. NOTE: 801 VLS transfer pump is attil losing its prime.
32	9.6	6.5	146	0.5	56	10	8.0	1510	1473	1507	2	27	4	6,061	NM	NM	12		System coerational upon annivil/departure 701 PID Rawlings were completed.
24	10.2	8.0	172	9	59	8.5	8.0	1530	1499	1533	2	27	4	6,061	NM	NM	12		System operational upon amount/departure. Blower VFD:: ware both reduced to 40%. Sparge VFD were increased to 80%. Dilution was decreased to both blowers. Sparge
22	11.8	10.4	169	10	58	9.0	8,0	1559	1522	1556	2	27	4	6,061	NM	NM	12		System operational upon serval/departure, Dilution was closed for both blowers. R01 PiD Relatings completed
21	10.7	10.8	165	10.5	57	0.0	8,0	1656	1619	1653	2	27	5	0,888	NM	NM	12		System operations upon anneal/departure. Spange readings taken. Attempted unsuccessfully to upload program to the PLG-need to contact (T for privatedges. Skid Read
20	8.8	9.1	165	11	61	12.2	7.5	1694	1657	1691	2	27	6	7,812	NM	NM	5.2		System down upon arrived due to a VFD-8202 PML silem (VFD alarm code OLF). System courabonal upon departure, 701 PID Baadings were completed. VFD for blower
22.5	9.2	7.4	171	12	65	11.9	16.0	1742	1705	1739	2	28	6	8,477	NM	NM	5.2		System operational byout an type development of the complete of the second second second second to some power, 801 was raised to 40%. Both motors are running al 9 Amps, does not recognize PLC, all settings are locked by admin Skid Readings Laken from PLC
22	8	7.9	168	12	57	11.8	13.0	1816	1779	1813	2	28	7	10,088	NM	NM	5.2		System openalizeral users annual/departure. The 9 interval wells on the 701 manufold were closed 1/2 way. Monthly vipot and water monotonics samples were taken. Skid Re
25	9.4	92	171	14	58	13.4	13.0	1907	1869	1904	2	29	8	10,460	NM	NM.	5.2	1	In the production of the standard water of the standard water of the standard st Standard Standard St Standard Standard St Standard Standard S Standard Standard S
24	9.4	10.2	176	13	54	12,6	15.5	2006	1969	2003	2	29	0	11,796	NM	NM	5.2	1	System operational upon anneal/departure. M9, M16, & M17 true union ball values were tightened. Additional LOTO photos were taken for A&OI documents. Sparge reading
24.5	10	9.7	167	13	48	12.3	18	2051	2013	2048	2	29	9	12,039	NM.	NM	5.2	1	System operational upon antival/departure 701 & 701 PID Readings were completed Addisonal LOTO pics taken, Wated for PSCAA, but they did not show up. Skid Rea
24	15.7	12.8	182	14	57	13.4	15.0	2146	2109	2143	2	30	9	12,420	NM	NM	5.2	-	
23	22.1	16.1	193	15.5	62	15 1	14,5	2340	2303	2337	2	30	10	13,728	NM	NM	6.2	2	System operational upon arrivel/departure: 801 reduced to 50% (now both 701 5.001 are (2.55%); Breakthrough has reached over 10% in carbon brans 1 & 3.
	-			**	-			-		-			-		-			1	System operational upon arrival, system LOTO upon departure. System shall drive for carbon replacement. System LOTO upon arrival. The tops were removed from the 3 primary carbon vessels. Execute channed out carbon and also removed the 4 000 lbs. of narbon from the last
23.5	15.0	13.3	200	15,5	68	15.4	26.0	2411	2373	2408	2	30	11	14,011	NM	NM	5,8	*	Has restarted. The system was operational upon departure
23,5	19.5	18.8	175	13	57	12.5	8.5	2529	2492	2526	2	30	11	14,093	NM	NM	5,9	8	System operational upon zeroval/teparture. Sparge readings were taken. PRD readings were taken. Monthly upon samples were collected, and weter samples were collected
24	20	22	175	13	60	12.6	9.0	2697	2660	2694	2	30	12	14,692	NM	NM	6.2	7	System operational upon entruel/departure. Sparge readings were taken. Oil topped off in B-801 and B-701. Vac progets on blower inteless need to be replaced 701 blower down upon entruel for high blower outlet temp. Alarm selpoint was set at 120°F. The timbion factor for temperature extremes was the extraction PVC which has a
24	18.2	16,3	208	13	88	12,6	16.0	2843	2829	2864	2	30	12	14,967	NM	NM	6.2		ma coenstand upon departure. NOTE: Anemometer was not functioning properly for flow measurements.
23	8.0	8,1	190	13	64	13	0,0	3033	301.9	3054	2	30	13	15.623	NM	NM	ā.1		Existen operational upon envolt/departure. Vac gauges on blower intellers need to be replaced. Monthly vapor samples and water samples were collected. [Including FOG ]
23	7.9	8.0	210	13	89	13.4	8.5	3135	3121	3158	2	30	13	15,830	NM	NM	8.4	1	Bystem operational upon envelopmentare. Vac gauges on biower intellant need to be reptaced. HDTE: Rentied memomater was used for this visit. Bystem operational upon anival/departure. Belts on B-701 and B-801 were tightened. Photos were taken of potential new monitoring well locations. Vac dauges on blower in
23	6.6	6.8	198	13	75.	12.5	9.0	3370	3365	3390	2	30	13	15,861	NM	NM	12,1	5	Ale visit and will be used from now bn
24	60	1.4	190	12	70	127	90	3470	3456	3490	2	30	13	16,058	NM	NM	15.0	1	eplaced. Vec gauges on blower intakes need to be replaced. System operational upon iteratives
	- <u>/-</u> .)[	10	13		60	1747	9	1676	3624	/			16	,35	/		-1+-21		45 spatiant up around Ideputures B-701 m atter 1.5445. B-701 VEd work to 53% wells AS zones DSE march to 40~5-
																			FID renders taken

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	1
C. 2014 BOY that had an action accorder	f
2007, 0012, P.D. Weit Hot Operating Droperty.	
	8
med=DK. Plainbling was modified to some call I for VPCs.	Č
tad. Spaces manifold readings completed	
pins. 701 PID Rendings completed	
readings were taken	
ings taken from PLC.	
891 naminal motor sing railing increased from 11.6 to 14.9. Skid Readings taken from PLC	
with max peaks of 10.8 Amps. Attempted unsuccessfully to upload program to the PLC-device	
odinga taken fram PLC	
> emps steering. The sparge compressor was raised to 100% and the intervals were set to 10	
gs-wore teken. Skiel Reedinge taken from PLC	
edings taken from PLC	
on op onen some nogen tracegn preserve and reasoning canner rout recently	
I changeout from the site. Upon Evolution dependence the tone wave reliestabled and the sources	
Consigned include site Open Executes departure, the tops were remistaned and the system	
I (NO FOO BAMPLES COLLECTED)	
an upper limit of 140°F, which is what both the 701 & 801 alarm setpoints were set is Svalam	
samples), NOTE: Rented anemometer was used for this visit.	
nlakes need to be replaced NOTE: New Dwyer model 471B-1 anemometer was used for	
sed to 55%. Air sparge time was increased to 15min on all groups. First cartridge water filter	
	1 1 be children
march to 60% 5 youlls	close 0, par survive
10 Back 10 K Lan	
My of the sea	

03132603B Field Data log 140527 6/3/2014

SYSTEM LOG SHEET PHILLIPS 66 FACILITY #255353 600 Westlake Avenue ERI Job No. 03132603B

								1				VPC Am	iy.												DPE S	vstem Skid	(B-701)			1		DPF S	atam Skid
			Stack Air	Stack Air	Flowrate	Stack Air	Stack Air	Flowrate	Stack Air	Stack Air	Flowrate	HC Into 1st	HC Into 1st	HC Into 1st	HC Into 2nd	HC Into 2nd	HC Into 2nd	HC out Stack	HC out Stack	HC out Stack	Samples	VPC	Magnahelic	Vac into	Vac into	Temp	Press	Blower	Blower	Magnahelic	Vac into	Vac into	Temp
Date	Time	Namo	Temp	Velocity		Temp	Velocity	- Institute	Temp	Velocity	Tiowidto	VPC1	VPC2	VPC3	VPC1	VPC2	VPC3	1	2	3	Collected?	Drain	Gauge	VLS	Blower	Dischg	Blower Dischg	HC (pre-dil)	HC HC	Gauge	VLS	Blower	Blowe Dischg
			VPC-1 *F	VPC-1 fVmin	VPC-1 SCFM	VPC-2	VPC-2 ft/min	VPC-2 SCFM	VPC-3 °F	VPC-3 fl/min	VPC-3 SCFM	INE-1 ppmv	INF-2 ppmv	INE-3 ppmv	INT-1 ppmv	INT-2 ppmv	INT-3 ppmv	DSCHG-1 ppmv	DSCHG-2 ppmv	DSCHG-3 ppmv	Y/N	aal	*H,O	'H,0	"H-O	*	'H.O	ninmy	DOMA	74.0	HO	71.0	*F
12/27/2013	12.00	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	.0.T	0,0	0.0	0.0	v		0,08	26	29	78	37	NM	29.0	0.07	26	25	78
1/3/2014	12:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM.	NM	NM	NM	0.4	0.5	0.5	0,0	0.0	0.0	n		0.06	26	31	BO	37	NM	18.0	0.06	26	26	78
1/6/2014	16:45	BL3	NM	NM	NM	NM	NM.	NM	NM	NM	NM	NM	NM	NM	na	na		190	-09	ina	n	_	0.06	28	32	78	37	NM	21.1	0.07	28	25	73
1/7/2014	11:30	EJB	72.0	5400	503.1	72.0	5210	485;4	.71.1	4980	464_7	NM	NM	NM	0.3	0.5	0.4	0.0	0.0	0.0			0.03	18	22	78	38	NM	19.3	0.06	26	26	78
1/8/2014	16:30	EIB	71.0	5540	515 0	69.0	5310	NM 496.4	68.0	NM 5300	NM 496 4	NM	NM	NM	0.2	03	0.4	0_0	0.0	0.0	п.		0.04	18	21	77	38	NM	25.4	0.06	26	26	78
1/10/2014	9.30	EJB	75.8	5600	517.4	73.3	5410	502.2	73.0	5690	528.5	NM	NM	NM	1.6	21	3.1	0.0	0.3	0.0			0.04	22	25	76	38	NM	34.1	0.07	20	27	76
1/13/2014	16:40	EJB	80.2	5560	509.0	77.1	5780	532.2	76.2	5950	548,7	NM	NM	NM	1.0	1.4	3.2	0.5	0.8	0.0			0.05	22	26	82	37	NM	21.5	0.08	26	30	83
1/14/2014	11:30	EJB	79.8	5430	497.4	77.0	5690	524.0	76.5	6000	553.0	NM	NM	NM	0.0	0.1	0.6	0.0	0.0	0.0	'n		0,05	22	26	82	37	NM	20.2	0,09	27	32	82
1/15/2014	15:20	EJB	81.3	5610	512,5	78.2	5590	513,6	77.1	5840	537.7	NM	NM	NM	0.0	0.5	3.6	0.4	0.7	0.6	0		0.04	23	27	83	37	NM	22.5	0.07	27	33	84
1/16/2014	10:15	NAG	72.9	5800	538.2	72,9	5750	533.6	72.8	5800	538,3	NM	NM	NM	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.04	24	28	76	37	NM	14,8	0.07	28	36	77
1/17/2013	12.15	NAG	80.7	4850	441.1	77.3	4600	421.0	74.6	5050	464,5	NM	NM	NM	0.0	0.4	3.9	01	0.2	0.2	<u>n</u>		0.08	34	37	80	36	NM	36.5	0.12	44	51	85
1/20/2014	9.00	EJB	/9.6	5000	456,7	76.2	4920	452.2	74.2	4940	455.7	NM	NM	NM	0.0	0.8	6.5	0.2	0.0	0.1	0		0.08	33	37	79	37	NM	37.9	0.11	44	59	82
1/22/2014	10:30	EJB	80.0	4950	451,8	79,3	5060	462.4	81.1	5500	500.9	NM	NM	NM	0.0	22	11.5	00	0.1	0.2	0		0,14	46	50	91	34	NM	42.8	0.17	53	65	89
1/23/2014	16:30	EJB	75.5	4560	418.2	74.8	4770	438.1	76.0	5150	471.9	NM	NM	NM	0,0	2.6	12.5	0.1	0.2	0.2	n	1.00	0.14	40	48	85	34	NM	56.6	0.10	33	50	80
1/24/2013	17.30	EJB	76.4	4720	432.2	75,5	4790	439,3	77.3	5250	479,0	NM	NM	NM.	0.0	2.8	14,0	0,3	0.2	0,1	n		0 14	41	49	85	34	NM	52.5	0.08	32	100	80
1/27/2014	12.00	EJB	74,4	4710	431.9	74.2	4700	431.1	76,0	5200	475,4	NM	NM	NM	0.0	3.2	14.7	0.0	0.0	0.1	Y	1	0,12	41	50	84	33	NM	52.8	0.09	31	100	77
1/28/2014	13:15	EJB	78.6	4830	439,5	77.8	4840	441.0	70,1	5230	475.4	NM	NM.	NM	0.1	4,1	15.5	0.0	0.2	0.3	n		0.12	40	51	88	33	NM	43,5	0.09	31	50	<u>A1</u>
1/29/2014	10:40	EJB	85.1	5050	450.9	79.6	4510	406,9	77.5	5020	454.6	NM	NM.	NM	0.2	4.4	13,9	0.1	0.1	0.1	0	-	0_14	44	55	88	31	NM	41.5	0,13	59	60	90
1/31/2014	11:30	NAG	73.7	4700	452,3	71.2	4800	433.3	76.0	4900	444,4	14.2	10.7	NM.	0.1	3,1	10.1	0,0	0.0	0.0	Y	-	0.15	44	54	85	31	NM	NM	0.17	56	61	88
2/3/2014	9:00	ELB	77.3	5100	464.1	74.1	4700	430.2	74.2	5060	463 1	NM	NM	NM	0.0	37	10.3	0.0	0.0	0.0			0.15	46	57	80	31	34.4	27.3	0.13	47	56	76
2/4/2014	13:00	NAG	77,3	4400	399.9	76.0	4625	421.4	76.0	4925	449	11.5	23.3	35.0	.0.0	4.0	12.0	0.0	0.3	0.2	n		0.15	46	57	83	32	35.0	33.1	0.12	45	54	81
2/11/2014	11:00	NAG	90.0	5100	449.7	85.8	5000	444,3	82.9	5050	451	14.7	25:0	35.5	0.1	10.4	17.2	0.0	0.0	0,0	.0.		0.17	50	62	87	29	35.5	37.6	0.15	51	58	86
2/12/2014	10:45	NAG	87,4	4900	438.4	87.7	5400	482.0	86.5	5400	484	29.3	24.5	24.5	0.1	13.1	21.0	0.0	0.0	0.8	n	- (	0.16	47	62	94	32.5	34,9	36 1	0,15	51	56	95
2/13/2014	13:30	NAG	82.7	4700	472,0	84.0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0.0	0,0	0.0	0.0	0.0	0.0	n		0.18	48	62	90	31	29,8	31.1	0.15	51	58	91
2/17/2014	14.45	NAG	81,1	4600	415.2 420 E	82.5	4750	427.6	82.7	5000	450	22.3	18.5	19,0	0.0	0.0	0,0	0.0	0.0	.0,0	.0		0,19	51	66	90.	31	28.7	27.1	0.15	52	56	90
2/20/2014	9.45	NAG	81.4	4800	432.5	81.4	5075	458.8	81.4	5500	497	22.3	17.1	16.8	0.0	0.0	0,0	0.0	0,0	0,0	y.		0,19	49	63	89	31.5	25.6	26.0	0.14	49	55	88
2/25/2014	12:00	EJB	88.8	4920	438.8	88.6	5600	499,7	A8.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0.0	0.0	0.0	n		0.17	48	66	94	32	31.5	29.1	0.18	45	58	03
2/26/2014	14:00	NAG	86,1	4150	365.2	86.8	4500	395 5	86.5	4675	411	24.3	20,0	19.7	0.0	0,0	0.1	0.0	0.0	0.0	n		0 19	49	68	91	24	25.9	32,4	0.23	53	57	92
2/27/2014	12:30	NAG	86.8	4100	359.1	88,3	4475	390.8	88,3	4800	419	23.2	19.1	19.8	0.0	0,1	0.1	.0.0	0,0	0.0	n		0.20	50	70	.90	23	26.1	31.3	0.30	63	70	95
3/3/2014	14:00	NAG	85,2	3925	344.0	87,4	4375	381,8	80.8	4450	389	21.3	18.8	18,7	0.0	0,0	0,0	0.0	0.0	0.0	n	-	0.74	50	53	90	22	24.3	27.5	0.32	62	65	94
3/5/2014	12:00	EJB	85.8	3880	330.2	87.6	4250	370.4	87.4	4300	375	25.3	19.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0	n		0.19	50	53	91	22	30.4	34.6	0.25	67	73	90
3/10/2014	15:30	NAG	89.5	4800	376.5	90.1	4775	4/3.0	89.5	4950	494	327	20.1	25.2	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.26	52	56	96	24	26.4	32.4	0.32	67	71	102
3/14/2014	10.15	NAG	90.5	4580	400.7	91.0	4900	428.3	90.4	5300	464	31.4	23.8	23.7	0.0	0.0	0.0	0.0	0,0	0.0			0.48	70	73	99	22	31.2	39.4	0.34	-71	74	100
3/18/2014	13.45	NAG.	91,9	4700	410,2	92.2	5075	442.7	91,5	5300	463	29.2	23.5	23.7	0,0	0.0	0,0	0,0	0.0	0.0	п		0.58	74	71	100	26	24.5	38.8	0.45	75	BO	100
3/20/2014	10:30	NAG	90.1	4750	416.6	90,6	5000	438.2	90.8	5350	469	31.4	26,0	26.0	0.0	0.0	0.0	0,0	0.0	0.0	n	_	0,63	71	75	99	27	31.4	34.9	0.48	74	79	99
3/24/2014	10:00	NAG	96.0	4900	423.5	.97.8	5500	473.6	97.6	5750	496	31.4	26.3	26,3	0.9	0.1	0.7	0.0	0,0	0,0	0	-	0,40	75	76	105	24	34.8	44.3	0.30	77	80	106
4/1/2014	12:00	NAG	92.4	4600	399.2	93:3	4950	428.9	93,0	5400	468	33.2	27.1	26.8	6.5	1.6	4,7	0.1	0.0	0.0	8	-	0.35	73	76	105	23	37.1	49.5	0,44	74	77	105
4/4/2014	13:00	NAG	101.1	5075	424.4	102.5	5600	479.1	102.5	5000		19.1	10.0	16.0	-	-	-			-	-		~	-	-	-	-	-	-		-	-	-
4/16/2014	11:15	EJB	94.2	4700	406.8	95.3	5750	478.1	94.8	5800	502	44.0	35.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	n V	-	0.48	71	74	108	24	17.8	21.8	0.40	73	76	109
1/23/2014	11:00	EJB	91.3	4660	406.2	93.0	5350	464.9	93,1	5550	482	46	40	31	0	0	0	0	0	0	n		0.20	62	-	102	23	47	-50	0.32	74	-	102
4/30/2014	12:30	NAG	113.5	NM	NC	114.2	NM	NC	114.0	NM	NC	39.4	32.3	32.7	0.0	0.0	0.0	0.0	0.0	0.0	n		0,59	73	74	119	24	48,3	53,1	0.23	73	75	118
5/8/2014	10:45	EJB	98.8	3920	336,3	100,2	4110	351.8	100.0	4250	364	25.2	21.0	20.4	0.0	0.0	0.3	0.0	0.0	0.0	Y		0.45	73	74	109	23	36.0	36.5	0.30	75	76	110
12/2014	16:30	EJB	113.3	3825	319.9	115,1	4010	334.3	114,9	4145	346	26.0	20.5	21.0	0.0	0,0	0.0	0.0	0.0	0.0	n	-	0.40	73	73	124	23	37.0	37.2	0.22	74	75	124
122/2014	10:55	EJB	112.8	3800	318.2	113,5	3090	333.6	113.0	4100	343	27.8	20.4	20,7	03	0,4	1.0	0.1	0,1	0,2	n		0,38	74	73	121	23	39.1	39.3	0.30	74	75	120
6/3/2014	11:00	EJB	107.5	3860	325.0	107.3	4000	336.5	107.4	4250	358	22.0	17.0	17.5	0.4	0.4	10	0.1	0.1	0.2	4		0.45	76	75	120	24.5	30.7	28,5	0.30	75	75	117
10/14	(	1000	1	]	00014	1	T			1	- arr	)	1	1	MOI	10	12	NO	120	1	1	-	/	1	10	119 1	24	32.0	31.3	0.35	68	69	112
1010	(		)	1.11	2	1	hule	20	1	(	2	10		129	0.7	110	41	0.0	0.0	0.0	r	)	17	a	3	1	la	(	100	9)	62	/	( .
		n lit	6	540		J'AL	440	)0	110.7	- YIL	70 E	J. U	20	17.1						UU	۱	1	1	1	1	10	2	21.	1 32	1	061	<u> </u>	11
	1	170	C			100			11.	47		1	2.0								0	17	U		)		2		n 4	31			11
	Ì					11																		-	77				0,-			175	1
																								1	10				2			U	par -

03132603B Field Data log 140603 6/10/2014

Conversion\$	6 24E-11 lbs/ft ³ = 1 microgram/m ³
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microgram/m3 = 10 @ x ppmv x M (STP)

_			-					-									Constant	100	1. motecular weight . 1997g
3-801)			-		Air Sparge S	ikid	-				p	-	1						
Press	Blower	Blower	Turnelin	0	T	0	Manakati	Discourse	Discould	Sparge	VLS Transfer	VLS Transfer	Tank		1004144		Tank Transfer	Estimated	
Blower	HC	Outlet	HX	into HX	HX	out HX	gauge	Meter	Meter	Compressor	Pump Hour	Pump Hour	Pump Hour	Totalizer	Pressure	Pressure	Pump	Removed	Comments
Discing	(pre-dil)	HC								Hour Meler	Meter	Meter	Meter				Pressure	(Vapor)	
HI O	1	-	10		-			B-701	B-801	C-2201	P-401	P-501	P-5501		-				
H ₂ U	vmqq	ppmv		PSI	F	PSI	HO	hrs	hrs	hrs	hrs	hrs	hrs	gal	psi	psi	psi	lbs	
35	NM	25.2	125	7	44	8	4.5	284	247	283	1	1	1	965	NM	NM	10.1		
35	NM	17.9	140	4	44	6.5	4.5	398	361	397	1	i.	1	1,286	NM	NM	0.7	1	
35	NM	17.2	115	4	42		45	401	364	400		the second	1	1.287	NM	NIM	0.8	1-	
07		1	105		24		1.4	193		100		1		typester.	- may	1404	4.0	1	
31	NM	16.4	125	4	45	6	4.5	420	383	419	11	1	1	1,394	NM	NM	10		
36	NM	16.3	120	4	43	5	4.5	448	411	447	1	1	1	1,740	NM	NM	.10		
35	NM	31.8	120	7	43	8	5,0	472	435	471	1	1	1.	1,799	NM	NM	0.6	-	
36	NM	12.0	125	1	48	7.5	5.0	489	453	488	1	1	1	1,822	NM	NM	9.8		
36	NM	157	126	B.	50	65	5.0	568	532	568	í		1	2 4 3 0	NM	NIM	0.0		
-	NIN A	100	105	-	50	0.9	0,0	2308.	0.04	SHV						1		1	
-90	MM	10.0	120	0	52	6.0	5.0	587	000	080			4	2,4.30	NM	NM	10		
36	NM	14:4	125	6	51	7.0	5.0	615	578	612	t		4	2,460	NM	NM	9.8		
36	NM	17.3	118	7.5	41	60	5,0	634	597	631	- 1 -	1111	.1	2,462	NM	NM	NM		Insufficient water for pensaure readings.
32	NM	15,0	118	6.5	41	6,0	5,0	659	623	656	1	1	1	2,462	NM	NM	NM		Insufficient valer for pression readilyon
33	NM	12.8	120	6	42	6.5	5.0	729	602	725	1.1			2.462	NIM	NIM	NM		
101		12.0	12.0	-	42	- Gan	9.4	120	0.02	165				8,402	14141	.7990	1 WW		Turenussian mean (o. Grézzma regologiz ».in Lipsélogiz perez
31	NM	15.9	123	6	44	5,5	5,0	757	721	.754	- I	1	1	2,501	NM	NK!	- 11		Attempted to recluce dilution air further, but persistent VPOW-/1101 alarms prevented this. PIO Readings taken
34	NM	14.6	125	6	48	0.5	5.0	777	740	774	1	1	2	2,501	NM	NM	NM		Insufficient water for pressure readings
33	NM	16.2	125	8	46	8,5	5.0	807	770	804	1	1	2	2,516	NM	NM	NM	2	Insufficient when for pressure readings
33	NM	14.5	125		48	7.0	5.3	832	795	829	4 -	4	2	2.516	NM	NM	NM	1	Intel Report water for menories confirms
		45.0	145					000		005					1.000				manifediti wate Ad pressine relatings
32	NIM	10.2	115	0	44	0,0	0,5	HUB	861	895	_	-	2	2,516	NM	-NM	9,8		
32	NM	13,5	130	8	48	8.0	5,0	923	886	920	1	1	2	2,533	NM	NM	NM		Insufficient water for pressure readings
28	NM	16.5	125	9	50	8.5	5,0	946	909	943	1	1	2	2,984	NM	NM	0.t		Reduced dilution at a bit on B-801. Tank trans pump press went down after switching discharge is direct drain (not to Eaker lank)
28	NM	NM	128	9	45	7	5.5	963	926	960	4	1	2	3,309	NM	NM	7		System down upon intrial replaced powered dilution (30%) van 601. Ealers iver jumined wit tel sample rents jestelled words down by each biogen. Samples tease 14,146. 25
30	27.5	49.5	110	10	20	9.5	5.6	056	020	062			-	2 295	NIM	NIM			a state of the sta
50		10.0	1,19	10				000	94.9	800			6	3,303	NIVI	1444		1	System down upon arrival, restarred, opened diduoin slightly on 801 AS reedings taken. Individual weil PID Reedings completed. Bakar tank picked up
.30	NM	14.2	118	1	40	8,7	5.5	1035	998	1032		_ 1	2	3,406	NM	NM	5.2		System operational upon arrival, Individual well PID Readings taken for 3/4 wells.
30	24,9	13	118	8	38	8.0	5.5	1083	1026	1060	1		2	3,418	NM	NM	NM		System operational upon enroal/departure PID reactings completed. AS we9 readings taken.
27	25.7	15.2	142	.8	49	6	8,0	1229	1192	1227		1	3	3,823	NM	NM	12		System operational upon arrival/departure, 701 & 801 Novers induced to 60% from 65%. Sparge compressor anneased from 25% to 50%
32	22.8	13	145	7	56		85	1255	1218	1252	1	13	3	4 318	NM	NM	12		the fam operational upon arrival/departure and DID Davidings completed. Course satisfies a simpleted 201 VIC successful to the stress state of the stre
		10.7																	ayawin operational aport annear aport and a compared a compared and a compared out a compared out a compared in a loss its prime and was round hunding dry. Reported
31	18.0	10.7	144	g	55	6	8,5	1274	1237	1272	2	13	3	4,352	NM	NM	12		System operational upon annual/hepartural Semens carbon change for VPCs 1-1, 2-1, 3-1, 8 3-2 701 PID Readings completed. Precarbon water filter replaced
31	18,2	11.1	141	8	49	7	8.5	1341	1304	1338	2	27	.4	5,377	NM	NM	12		System down upon anival due to 801-VLS High-Fligh This caused HT pump to stop, so the contenuent area was full as a result. Containment pumped out, system restarted
32	17.5	7.9	141	8	47	7	9,0	1366	1329	1364	2	27	4	5,728	NM	NM	12	-	System down upon arrival due to a VFD-8202 PNL starm, Dilution air was increased slightly on 891 blower. Compliance air samples were taken in addition to influent samples.
32	10.7	6,2	144	9.5	47	9	9.0	1388	1351	1385	2	27	4	5,791	NM	NM	12		System coantinual upon attimi/departure. Monthly water tamples, were taken 101 PID Readons were completed NDTF 101 VI 5 transfer super is with being its waters
32	0.0	65	148	0.5	56	10	8.0	1510	1473	1502		57	4	6.061	NM	NIM	10		
52	9/4	0.5	344	0.0	46	10	0.0	1010	1473	1007	-	a	4	0,001	ININ	1950	- 14		System operational upon arrival/departure 701 PID Readings were completed
24	10.2	8.6	172	0	59	8.5	8.0	1536	1499	1533	2	27	4	8,061	NM	NM	12		System operational upon anival/departure. Blower VFDs were both reduced to 40%. Sparge VFD were increased to 50%. Diution was decreased to both Movers. Sparge read
22	11.8	10.4	169	10	58	9.0	8,0	1559	1522	1556	2	27	4	6,061	NM	NM	12		Syntem operational open wrival/departure. Divulion was closed for both blowers. 601 PID Readings completed
21	10.7	10,8	165	10.5	57	8.0	8,0	1656	1610	1653	2	27	5	6,888	NM	NM	12		System operational upon entret/departure. Sporge readings taken. Attempted unsuccessfully to upload program to the PLC-meed to contact IT for privatedges. Skild Readence
20	9.8	9.1	165	11	61	12.2	7.5	1694	1657	1691	2	27	6	7.812	NM	NM	5.2		System down upon arrivel due to a VED.8202 PNL alarm (VED alarm code QLE). System coversional upon departure, 704 PID Readings upon annulated VED to blow and
22.5	0.2	24	171	10	85	11.0	18.0	1742	1705	1720		28	c	0.477	NIM	NIM	5.0		System operational upon annexide parture. 801 PID Readings were completed 701 was reised to 45% power, 801 was reised to 40%. Both motors are running at 9 Amps, with
22.3	21	1.1		12	69	11,9	16,0	1/92	1/00	11.58	2	20	0	8,4/7	NIN.	MM	5.2		diese nut recognize PLC, all settings are locked by admin Skill Readings taken from PLC
22	8	79	168	12	57	11.8	13.0	1816	1779	1813	2	28	7	10,088	NM	NM	.5.2		System operational upon anival/departure. The Blained wells on the 781 manufold were closed 1/2 way. Monthly upper and were compliance samples were balant. Shirt Reading Striker operational upon anival/departure. The Jaland wells on the 781 manufold were closed 1/2 way. Monthly upper and were compliance samples were balant. Shirt Reading Striker operational upon anival/departure. The Jaland wells on the 781 manufold were closed 1/2 way. Monthly upper and were compliance samples were balant. Shirt Reading Striker operational upon anival/departure.
25	9.4	0,2	171	14	58	13,4	13,0	1907	1869	1904	2	29	8	10,460	NM	NM	5.2		reprint down to the annual operation of the range of the range of the unitative code 20 mm / 11 was raised to ours do the strated to ours both motors were running at 10.5 am minutes. Compliance punch inst was completed with the exception of the unitative copy (ran out). Skild Readings taken from PLC.
24	9,4	10.2	176	13	54	12.6	15.5	2006	1969	2003	2	20		11,796	NM	NM	5,2		System operational upon annual departure, MD, M18, & M17 true union bail valves were tightened. Additional LOTO photos were taken for A&OI documents. Searce readivos w
24.5	10	9,7	167	13	48	12.3	18	2051	2013	2048	2	29	8	12,039	NM	NM	5.2		Zustern operational upon annual denature. 701 & 301 PID Reactions were completed. Additional I OTO plan taken Water Tay DID A & La market and
24	45.7	12.0	400		67	42.4	45.0	0440	0400	01.10	2	20		10.100	NIF 4	NIA			System operational upon arrival/departure. Westiake SVE & Sparge wells were shul-off. 701 reduced to 50%, 801 elevated to 56%. Waited for PSCAA, but they that me show up. Skild Reading
24	15,1	12.8	182	14	10	13.4	15,0	2146	2109	2143		90	v	12,420	NM	NM	9.2	+	ung ont
23	22.1	16.1	193	15.5	62	15,1	14.5	2340	2303	2337	2	-30	10	13,728	NM4	NM	0.2		System operational upon ar/wal/dejuarture. B01 /educed is 50% (now both 701 & 801 are (2 50%). Binakihrough has reached over 10% in carbon Itains 1 & 3.
	-								-	-				-			-		System operational upon arrival, system LOTO upon departure. System shut down for carbon replacement.
23,5	15.9	13.3	200	15.5	6.8	15.4	26,0	2411	2373	2408	2	30	11	14,011	NM	NM	5,8		System LOTO upon arrival. The tops were removed from the 3 primary carbon vessels. Evoque changed out carbon and also removed the 4,000 lbs. of carbon from the last changed net carbon and also removed the 4,000 lbs. of carbon from the last changed in the transmission of the system was operational upon department.
23.5	10.5	18.8	175	13	57	12.5	85	2520	2402	2526		20	11	14.003	NIM	NIBA	5.0		Salar environmentary lange and discussion for the second second second second second second second second second
	10.5	10.0	115		. 41	12.0	0.0	2.42.5	4496	2020				19,000	14191	14100	0.0		22-bit operative upon intransception, operative and a were taken. Pill reasings were facal, intransity who camples were collected (NC).
24	20	22	175	13	60	12.6	9,0	2697	2660	2694	2	30	12	14,692	NM	NM	6.2		Instant operational upon annual/departure. Sparge readings ware tower. Oil topped off in 8-801 and 8-701. Vac gauges on biower interes need to be replayed.
24	18.2	16.3	208	13	88	12.6	16.0	2843	2829	2864	2	30	12	14,967	NM	NM	6.2		The solid control control control control control control of the solid of the solid control o
23	8.0	8.1	190	13	64	13	0.0	3033	3019	3054	2	30	13	15,623	NM	NM	8.1		Instem operational upon annual/departure. Vac gauges on blower intakes need to be replaced. Monthly yaper samples and water samples were collected, (includion Brid same
23	7.0	8,0	210	13	80	13:4	8.5	3135	3121	3156	2	30	13	15,830	NM	NM	8.4		System operational upon any without use Var devices on binary interact the regional WYVEY boated assessment of the data of the
22			ton			10.0		7770	gate	7500			10	AF Por	AILA		10.4		3/2/www.operational.upon anival/departure Bells on B-701 and B-801 were tightened. Photos were taken of potential memonitoring well locations. Vac gauges on blower inlake
23	0,0	0,0	198	13	75	12.5	40	3370	3355	0900	- 6	30	1.8	15,661	NM	NM	12,1		1111 VIEIT and will be used from now on. In the used from users found onsite PAH-2501 XCH @ 18:11 5/25/14. LAHH-501 VLS @ 14:19 5/26/14 LAHT.SON VIS @ 14:40 5/26/14 D 14:40 5/26/1
24	6,0	6.0	190	13	70	12.7	8.5	3470	3456	3490	2	30	13	16,058	NM	NM	5.0		Indexed. Viac gauget on blower intelline need to be replaced. System operational upon departure.
23.5	5.5	5,5	193	14	66	13.3	9.0	3638	3624	3659	2	30	14	16,351	NM	NM	4.5		volume operational upon envisionage and e. e-All was increased to 00% and 4 Mexical street wells were closed but caused a VFD statisticant after about 1 Strs, so B-701 was m in Zones D and E and as some site was decreased to finition on zones A.B and C. PID reindings were taken.
125	1	1 -					18	1			2	91			1x	1	1		Si A. I in all aller
11.	/	40	11		1	N C	P Q.	/			-	51	1				1.1	/	sys opporter open crimins putter
	1	5'1	10	il.	IL	3.	$b \ge y$		1	1	7.1	/	14	(			1	/	
C	4		10	19	6	1 12	NI.		190				11	2	11 G.	21	/ /	6	As the month to IV Zones ABC
)	•		1.	1.4			240	· · ·	511						10112	-0	1 /	`	
							5			10	1994				~/( ·	-			
										1.1	SUF	0							

1.0

6/10

(F-701, 601). PID was not operating properly
simed=OK. Plumbling was modified to even out [] to VPCs
and another the surface of the second of
area: sparga manifold (mailings completed).
nples. 701 PiD Readings completed
a valentinare utana Valenci
A LEMMIN (1) YEAR LANDIN.
dings taken from PLC
r 801 nomicel motor emp reling mereened from 11 8 to 14 0. Skid Readings taken from PLC
s, with max peaks of 10.8 Amps. Attempted unsuccessfully to uplead program to the PLC-device
Teaching taken form 11.4
5 emps steadily. The sparge compressor was raised to 100% and the intervals were set to 10
nga were token. Skid Readings taken from PLC
adings taken from PLC
how up Small breakthrough through primary carbons Skild Readings taken from PLC from
st changeout from the site. Unon Fuenua's departure, the term takes reliested and the sur-
generation of the state of the
MO FOR SAMPLES COLLECTED)
an upper limit of 140°F, which is what both the 701 & 801 alarm setpoints were set to System
samples), NDTE: Rented anomometer was used for this visit.
Initian need to be rectioned NOVE New Providence
minimum room to be replaced. NOTE: New Dwyer model 471B-1 enemonater was used for
ased thi 55% Air sparge time was increased to 15min on all groups. First cartridge water filter
was moved to 53% and wells M2 and M16 were closed. Air sparge time was increased to 40min

SYSTEM LOG SHEET PHILLIPS 08 FACILITY #265353 000 Westlake Avenue ERI Job No 03132603B

					12		1						7				1		(				-					Disc	- 1				-
а ті	ime Na	ume	Stack Air Temp	Slack Air Velocily	Flowrate	Slack Air Temp	Stack Air Velocity	Flowrate	Steck Air Temp	Stack Air Velocity	Flowrate	HC Into 1st VPC1	HC Into 1st VPC2	HC Into 1st VPC3	HC Into 2nd VPC1	HC Into 2nd VPC2	HC Into 2nd VPC3	HC out Slack 1	HC out Stack 2	HC out Stack 3	Samples Collected?	VPC Line Drain	Magnahelic Gauge	Vac into VLS	Vac into Blower	Temp Blower Dischg	Press Blower Dischg	Blower Inlet HC (pre-dil)	Blower Outlet HC	Magnahalic Gauge	Vac into VLS	Vec into Blower	E (
		-	VPC-1 *F	VPC-1 ft/min	VPC-1 SCFM	VPC-2	VPC-2 ft/min	VPC-2 SCFM	VPC-3	VPC-3 fVmin	VPC-3 SCFM	INF-1 ppmv	INF-2	INF-3	INT-1	INT-2	INT-3	DSCHG-1	DSCHG-2	DSCHG-3	VAN	cay	*H.O	14.0	240	*F	16.0		-	18.0	"14.0		Ŧ
27/2013	12:00	EJB	NM	NM	NM	NM	NM.	NM	NM	NM	NM	NM	NM	NM	0.0	0.0	0.1	0.0	0.0	0.0	×		0.08	26	29	78	37	NM	20.9	0.07	26	25	t
3/2014	12:30	EJB	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.4	0.5	0.5	0.0	0.0	0.0	n		0.08	26	31	-80	37	NM	10.0	0,06	28	28	T
8/2014	10:45	EJB	ŃM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM.	NM	na	na	na	'na	na	na.	а.		0.08	28	32	78	37	NM	21.1	0.07	28	25	
17/2014 1	11:30	BLB	72.0	6400	503.1	72.0	5210	485.4	7.1.1	4980	464.7	NM	NM	NM	0,3	0.5	0.4	0.0	0.0	0.0		_	0.03	18	22	78	38	NM	19,3	0.08	25	28	-
9/2014 1	16:00	EJA	71.0	5540	515.0	NM	5310	NM ARE A	NM	NM	NM	NM	NM	NM	0.2	0,3	0,6	0.0	0.0	0.0	0		0.04	18	21	77	38	NM	25.4	0.06	28	26	+
10/2014	9:30 1	EJB	75.8	5600	517.4	73.3	5410	502.2	73.0	5590	496,4 528.5	NM	NM	NM	0.2	0.3	1.0	0.0	0.0	0.0	n		0.04	22	25	78	38	NM	34,1	0.07	26	27	t
13/2014 1	16:40 1	EUB	80.2	5560	509.0	77.1	5780	532.2	76.2	5950	548.7	NM	NM	NM	1.0	1.4	32	0.5	0.5	00	0		0.05	22	28	97 82	38	NM	20:0	0.07	27	20	t
14/2014 1	1:30 1	EJ(B	79.8	5430	497.4	77.0	5690	524.0	76.5	6000	553.0	NM.	NM	NM	0.0	0.1	00	0.0	0,0	0.0	n		0.05	22	28	82	37	NM	20.2	0.08	27	32	t
15/2014 1	15.20 E	JB	813	5610	512.5	78.2	5590	513,6	77.1	5840	537.7	NM	NM	NM	0.0	0.5	3.8	0.4	0.7	0.6	n		0.04	23	27	83	37	NM	22.5	0.07	27	33	
16/2014 1	0:15 N	IAG	72.9	5800	538.2	72.9	5750	533.0	72.8	5800	538.3	NM.	NM	NM.	0.0	0.0	0.0	0,0	0.0	0,0		-	0.04	24	28	78	37	NM	14.8	0.07	28	36	
17/2013 1	2:15 N		80.7	4850	441.1	77.3	4600	421.0	74.6	5050	464.5	NM	NM	NM.	0.0	0.4	39	0.1	0.2	0.2	n	-	0,08	34	37	80	36	NM	38.5	0.12	44	51	+
21/2014 1	4:15 N	LAG	87.2	4800	429.9	A3.2	5100	462.2	74.2 80.0	4940 5150	455 7	NM.	NM	NM	0.0	0.8	0.5	02	0.0	0.1	n	-	0.08	33	37	79	37	NM	37.9	0.11	44	59	ł
2/2014 1	0:30 5	JB	80.0	4950	451.8	7.9.3	5060	462.4	81.1	5500	500.9	NM	NIM	NM	31	7.8	16.3	0.1	0.4	0.5	n		0.14	48	50	<u>91</u>	34	NM	42.8	0.17	53	65	t
3/2014 1	6:30 E	JB	75.5	4560	418.2	74.8	4770	438.1	78.0	5150	471.9	NM	NM	NM	0.0	2.5	12.5	0.1	0.2	0.2			0.14	40	48	85	30	NM	56.6	0.10	33	50	t
4/2013 1	7:30 E	JB	76,4	4720	432.2	75.5	4790	439,3	77.3	5250	479.9	NM	NM	NM	0.0	2.6	14.0	0.3	0.2	0.1	n		0,14	41	49	85	34	NM	52.5	0.09	32	100	t
7/2014 1	2.00 E	JB	74,4	4710	431,9	74.2	4700	431.t	78,0	5200	475.4	NM	NM	NM	0,0	3.2	14.7	0,0	0.0	0.1	v	0	0.12	41	50	84	33	NM	52.8	0.09	31	100	
8/2014 1:	3.15 E	JB	76.6	4830	439.5	77.8	4840	441.0	79.1	5230	475.4	NM	NM	NM	0.1	4,1	15 5	0.0	0.2	0.3	n		0,12	40	51	68	33	NM	43.5	0.09	31	50	-
0/2014 14	4-45 N	AG	83.4	5050	450.0	79.6	4510	406.8	77.5	5020	454,6	NM	NM	NM	0.2	4.4	13.9	0,1	0,1	0,1	.0.		0.14	44	55	88	31	NM	41:5	0.13	59	60	+
1/2014 1	1:30 N	AG	73.7	4700	429.0	71.2	4500	413.2	70.1	4500	414.1	14.2	NM 10.7	25 a	0,1	31	10,1	0.0	0.0	0.0	У		.0.15	44	54	85	31	NM	NM	0.17	56	61	ł
2014 9	00 E	JB	77.3	5100	464_1	74.1	4700	430 2	74.2	5080	483.1	NM	NM.	NM	0.0	3.7	10.3	0.0	0.0	0.0	0		0,15	46	57	80	31	34.4	27.3	0.13	47	56	t
/2014 13	3.00 N	AG	77.3	4400	399.9	76,0	4825	421,4	78.0	4925	449	11.5	23.3	35,0	0.0	4,6	12.0	0.0	0.3	0.2	n		0.15	46	57	83	32	35.9	33.1	0.13	48	54	t
1/2014 11	1.00 N	AG	90.0	5100	449.7	85.8	5000	444,3	82.0	5050	451	14.7	25,0	35.5	0.1	10,4	17.2	0,0	0.0	0.0	α		0,17	50	62	87	29	35.5	37.0	0.15	51	58	
2/2014 10	2:45 N/	AG	87.4	4900	438.4	87.7	5400	482.9	88.5	5400	484	29.3	24.5	24.5	0.1	13,1	21,5	0.0	0.0	0.8	0		0,16	47	62	94	32.5	34.9	36.1	0.15	51	58	
7/2014 14	145 N/	AG	82.7	4700	422.0	84,0	4600	413.0	83.6	5100	458	24.7	22.6	21.2	0,0	0.0	0.0	0.0	0.0	0.0	<u>n</u>		0.18	48	82	90	31	29.B	31.1	0.15	51	58	-
9/2014 12	00 N/	NG.	82.9	4800	432.5	82.9	5200	468.0	82.r 82.3	5400	450	19.5	15.0	19.0	0.0	0.0	0.0	0.0	0.0	0.0	n	-	0.10	51	68	90	31	28.7	27.1	0.15	52	56	H
0/2014 9:	45 N/	G.	81,4	4800	434.0	81.4	5075	458.8	81.4	5500	497	22.3	17.1	16.8	0.0	0.0	0.0	0.0	00	0.0	0		0.10	50	64	89	31.5	25.6	26.0	0.14	49	55	t
5/2014 12	00 E.	в	88.8	4920	438.8	88.6	5600	499.7	68.6	5530	493	20.6	16.2	17.2	0.0	0.0	0.0	0,0	0.0	0.0			0.17	48	66	94	32	31.5	29.1	0,19	46	54	Γ
1/2014 14	00 NA	ug .	.80,1	4150	365.2	86.6	4500	395,5	86,5	4675	411	24.3	20.0	19,7	0.0	0,0	0.1	0.0	0.0	0.0	n.	- 1	0.19	49	68	91	24	25.0	32.4	0.23	53	57	
//2014 12	30 NA	G	86.8	4100	359,1	88.3	4475	390.0	88.3	4800	410	23.2	19_1	19.0	0.0	0.1	0.1	0.0	0,0	0.0	n		0.20	50	70	90	23	26.1	31.3	0.30	63	70	1
2014 12	00 FJ	He I	85.2 85.8	3925	344 0	87.4	4375	381.8	86.6	4450	389	21.3	18.8	18.7	0.0	0.0	0.0	0.0	0.0	0.0		_	0.74	50	53	90	22	24.3	27.5	0.32	82	85	F
2014 13	00 NA	G	02.2	4900	417.0	94.6	5475	473.8	94.0	5700	494	23.5	20.1	10.4	0.0	0.0	0.0	0,0	0.0	0.0	.0	-	0.19	50	53	91	22	30.4	34.6	0.25	67	73	F
2014 15	30 NA	G	89.5	4325	376.5	90.1	4775	415.2	89,5	4950	431	32.7	24.8	25.2	0.0	0.0	0.0	0.0	0.0	0.0	n v		0.34	85	88	98	24	26.4	32.4	0.32	87	71	Ē
2014 10	15 NA	G	90.5	4580	400 7	91.0	4900	428,3	90,4	5300	484	31.4	23.8	23,7	0.0	0.0	0.0	0.0	0.0	0.0	0		0.48	70	73	00	25	34.3	38.4	0.47	73	77	Ē
/2014 13	45 NA	G	91,9	4700	410.2	92.2	5075	442.7	91.5	5300	463	29.2	23.5	23.7	0.0	0.0	0,0	0.0	0.0	0.0	. 11		0.58	74	71	100	28	24.5	38.8	0.45	75	BQ	
2014 10	30 NA	G	90.1	4750	418.8	90.6	5000	438.2	90.8	5350	469	31,4	26.0	26,0	0.0	0.0	0.0	0.0	0.0	0.0		-	0.63	71	.75	99	27	31.4	34.9	0.48	74	70	-
2014 125	DO NA	G	92.4	4000	300.2	97.8	5500	473.8	97.8	5750	406	31.4	26,3	26.3	0.9	0.1	0.7	0.0	0.0	0.0			0,40	75	76	105	.24	34.8	44.3	0.30	77	80	H
2014 10:0	00 EJ	B	-	-	-		43510		93.0	5400	405	33.2	-	28.8	6.5	1,6	4.7	0.1	0.0	0.0	n		0.35	73	76	105	23	37.1	49.5	0.44	74	77	÷
2014 13.0	00 NA	G	101.1	5075	434:4	102.5	5600	478.1	102.5	5900	504	18.2	18.0	18.0	0.0	0.0	0.0!	0.0	0.0	0.0			0.48	71	74	105	24	17.0	-	-	72	70	-
2014 11.	15 EJE	3	94,2	4700	406.8	95.3	5750	496.7	94.6	5800	602	44.0	35.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	Y		0.18	72	-	102	23	38.2	40.1	0.32	74	- 10	-
2014 11.0	00 E.J	3	91.3	4660	408.2	93.0	5350	464.0	03,1	6550	482	46	40	31	o	0	0.	0	0,	0	n		0.20	62	-	100	24	47	50	0.30	74	-	Ξ,
2014 12:3	30 NAG	3	113.5	NM	NG	114.2	NM	NC	114.0	NM	NG	39.4	32.3	32.7	0,0	0,0	0,0	0.0	0.0	0.0	n	-	0.69	73	74	110	24	48.3	\$3.1	0.23	73	75	
2014 10-3	30 E.G	1	113.3	3626	336.3	100.2	4110	351.8	100.0	4250	364	26.2	21.0	20.4	0.0	0,0	0.3	0.0	0.0	0.0	Y	-	0,45	73	74	109	23	36.0	36.5	0,30	75	78	-
2014 10.5	IS EJE		112.0	3800	318.2	113.5	3990	333.0	113.0	4100	346	20.0	20,5	21.0	0.0	0.0	0.0	0.0	0.0	0.0	n	_	0.40	73	73	124	23	37.0	37.2	0.22	74	75	-
2014 11:0			111.0	3860	325.0	111.5	4000	396.5	110.4	4250	358	22.0	17.0	17.5	0.4	0.4	1.7	0.1	0.1	0.2	n	1	0.38	74	73	121	23	39.1	39.3	0.30	74	75	Ē
014 11:0	EJB	1	107.5	3940	333.4	107.3	4450	378,7	107,4	4450	377	23,5	17.0	17.4	0.5	0.0	1.9	0.0	0.0	0,1	0		0.40	77	78	119	24	32.0	31.3	0.30	68	69	Ē
014 10.3	IO EJA	5	109.6	3820	321.3	110.8	4430	371.9	110.4	4420	371	25.0	18,0	17,9	0.9	1.0	2,3	00	0.0	0.0	n		Q.40	79	78	118	23	29.4	33.0	0.37	82	82	-
, (	de la			200			(		1		. /		(	/	1.5	1.4	28	0.0	0.1	0.0			)	)		1	1	1	]=	1	)	1	1
1	040	)	2	830			in	20		Ľ	1150	1	100	1 1					- 1	0.0		1.20	1 01	5	1 1	2	12	1	1 1	1 1	4	Ser	
	Ĺ		1 0	- M -			404		1		110	30	10:	7 ]								09	1 20	nt	5 1	4	14	1	1	1 8	>	20	ŗ.
		10	57			100	a			0		<u> </u>	5	1										4º			NE	1 x	60	\ .	/		
		- t Y	- 1			EAV.	1		1	()				110										-			A 14		Ur	Na A	5		

100

Conversions	6 24E-11	lbs/tt ⁱ ≓	1 microgram/m ³
	- m - m - + +		

microgram/m3 = 40 9 x ppmy x M (STP)

-			1		_			1									Centerd	100	9 molesustrivoght, TPHg
3+801)	_	_	-	-	Air Sparge S	Kid.	r				P		1					-	
Press Blowe Disch	Blower Inlet HC (pre-dil	Blower Outlet HC	Temp into HX	Pressure into HX	Temp out HX	Pressure out HX	Magnahelic gauge	Blower Hour Meter	Blower Haur Meter	Sparge Compressor Hour Meter	VLS Transfer Pump Hour Meter	VLS Transfer Pump Hour Meter	Tank Transfer Pump Hour Meter	Effluent Totalizer	LPC1 Water Pressure	LPC2 Water Pressure	Tank Transfer Pump Discharge	Estimated Hydrocarbons Removed (Vapor)	Comments
	1	1		1		-		B-701	B-801	C-2201	P-401	P-501	P-5501			1	Pressure	(vapor)	
"H _I O	ppmv	ppmv	T.	PSI	°F	PSI	"H _i O	hra	hra	hrs	hrs	hra	hrs	gal	pol	pist	pti	lbs	
35	NM	25.2	125	1	44	ß	4,5	284	247	283	- 1	1	1	965	NM	NM	10.1		
35	NM	17.9	140	4	44	0.5	4,5	398	361	307	1	1	1	1,286	NM	NM	9.7	-	
35	NM	17.2	115	4	42	ō	4,5	401	364	400	- a i	1	1	1,287	NM	NM	9,8		
37	NM	16.4	125	4	45	0	45	420	383	419	1	1		1.394	NM	NIA	10		
36	NM	18.3	120	4	43	5	4.5	448	411	447	1	Ĩ.	1	1,740	NM	NM	10		
35	NM	31.6	120	7	43	a	5.0	472	435	471	4			1 700	NIL	NIM	0.0		
30	NMA	12.0	175	7	40	75	50	480	453	100			1	1,000		1.114	0.0		
26	ANA.	15.7	100		=0		5.0	500	699	600		-		1,022	- CSIDA	000	9.0		
20		10.7	100		50		in a	200	den.	000	-	4		6,430	I IVIVI	003	4.4	-	
	- Calle	10.0	169			9,9	3,9		630	000				2,430	ESIM.		10		
	INON	14.4	125		51	1,0	5.0	015	5/0	012	-		1	2,400	NM	NM	8.0	-	
30	NM	17.3	118	7,5	41	0.0	5.0	034	597	631	1	- T	1	2,462	NM	NM	NM	-	Innufficient weber for pressure readings
32	NM	15.0	118	6,5	41	6,0	5.0	059	623	658	1	1	1	2,452	NM	NM	NM		Histofficient water for processer rendrings.
33	NM	12.8	120	0	42	0.5	5.0	728	692	725	1	-1	1.	2,462	NM	NM	NM		InsuBoierd webr for pressize medings. PID Revisings telem
31	NM	15.9	123	0	44	5.5	5.0	757	721	754	1		1	2,501	NM	NM	19		Attroupted to reduce dilution air further, bul perpiratent VFDW-8191 attemp prevented bits. PID Readings taken
34	NM	34.0	125	6	48	6.5	5:0	777	740	774	1	1	2	2,501	NM	NM	NM		Insulfcient water for pressure readings.
33	NM	18.2	125	8	46	8,5	5.0	807	770	804	1	1	2	2,518	NM	NM	NM		Insufficient water for pressure readings
33	NM	14.5	125	0	48	7.0	5.3	632	795	829	1	1	2	2,516	NM	NM	NM		Insuficient water for pressure readings
32	NM	15.2	115	0	44	6.5	5.5	898	881	805	4		2	2,516	NM	NM	0.8		
32	NM.	13,5	130	8	48	8.0	5.0	023	886	920	1	1	2	2,633	NM	NM	NM		Imuliciant water for pressure resetrors.
28	NM	16.5	125	9	50	8,5	6.0	946	000	043		+	2	2,084	NM	NM	6.1		ReAred division air a bit on B-001. Tank train sumo press want down after satisfious discharge to direct division for to their stands
28	NM	NM	128	0	45	7	55	963	926	060		1	2	3,309	NM	NM	7		Svitim down upon wrivel restarted opened diution slobility on 501. Relies terk compared of 14 second acts by black durate for a second se
30	27.5	13.5	119	10	39	8.5	5.5	986	929	063	t	1	2	3,385	NM	NM	7		Section down upper already antibility of the section of the sectio
30	NM	14.2	118	7	40	0.7	5.5	1035	998	1032	1	1	2	3 406	NM	NM	52		Status president under subal fordant und RMT Trade of Land of March 1997
30	24.9	13	110		38	8.0	5.5	1060	1028	1000	4	1	2	HATR	NA	NM	NAR		
27	25.7	15.2	142	8	49	0	11.0	1229	1102	1227	1	1	3	3 823	NA	NM	12		California constanta a destruintemente en la regione a constante en anti regione a serie.
32	22.R	13	145	7	56	A	85	1255	1218	1967		13	3	1 210	hikd	Kike	in		View properties of the method particular, reviral response to do % short ES%, Sparge compressor increased from 25% to 55%.
31	18.6	107	140		55		ur	1774	1277	1979		17		4 363	ENG.	- Ditt	10		arginal operational operative out and readings compared. Sparge readings completed, 601 VLS pump hed lott ifs pame and was found running by Reprinted=D
	18.2	111	141		40	+	0.5	1241	1204	1998	-			1,002	haivi h	1494	10		System operational upon antiwanteparture. Tuemens carbon change for VPCs 1-1, 2-1, 3-3, & 3-2, 701 PID Readings completed. Precedori valler fillar replaced
27	175	70	141	0	40		0.0	1941	1004	1330	2	21	4	5,077	Dita	NIM	12		System driver upon arrival due to 601-VLS High-High Trans caused HT pump to stop, so the containment area was full as a result. Containment pumped cut, system restarted. Sp
	10.3		144		17		0,0	1300	1.52.9	130%	2	21		0,720	nova	ININ	12		System down upon arrival due to a VFD-8202 PNL aterm, Division ar was increased slightly on 801 blower. Compliance or samples were taken in addition to influent wereiner. 76
	10,7	0.2	149	9.9	97		0.0	1388	1051	1385	2	21.	.9	5,701	NM	NM	12	1	System coenstional upon annow/departure. Monthly water samples www.takan. 201 P/D Readings were completed. NOTE: 801 VLS transfar pump is still losing its prime.
	9,0	0,5	140	9.5	50	10	8.0	1510	14/3	1507	- 2	27	4	6,001	NM	NM	12		Switzwopanalonal upon armet/departure. 701 PID Readings were completed
24	10.2	8.6	172	9	59	8.5	8.0	1538	1499	1533	2	27	4	0,081	NM	NM	12		System operational upon arrival/departure. Blower VFDs were both reduced to 40%. Sparge VFD were incremed to 80% D/Julion was decreased to both blowers. Sparge meding
22	1,1,8	10.4	169	10	58	9.0	8.0	1559	1522	1650	2	27	4	0,001	NM	NM	12	1	Styrten openational upon annual/departure. Dilution was closed for both blowers. #01 PID Readings completed
21	10.7	10,8	105	10.5	57	8.0	8.0	1050	1619	1653	2	27	5	6,868	NM	NM	12	4	System operational upon introvi/departure. Sparge inadioga taken. Attempted unsuccessfully to uplead program to the PLC-need to contact IT for privatedges. Stud Readings tak System down upon annel due to a VFD-8202 PML alarm (VFD alarm onde OLF). System operational upon departure. 201 PLD Readings taken operational upon departure.
20	9.8	9,1	165	11	01	12.2	7.5	1694	1657	1691	2	27	6	7,812	NM	NM	5,2	# 5	PLC: System specificianal used any validebandure ADI PHI Readings were completed 201 was taken to 4% many ADI was single to 4% many and a 4%.
22.5	9.2	7.4	171	12	65	11.0	10.0	1742	1705	1730	2	28	0	8,477	NM	NM	5.2	4	down i does not recognize PLC, at satings are locked by admin Skid Readings taken from PLC
22	8	7.9	168	12	57	11.8	13.0	1818	1779	1813	2	28	.7	10,088	NM	NM	5.2	0	System operational spon antival/departure. The 9 loteral wells on the 701 manifold wave closed 1/2 way. Monthly vapor and wate compliance samples were taken, filled Readings
25	9,4	9.2	171	34	58	13.4	13.0	1907	1,669	1904	2	29	8	10,460	NM	NM	5.2	1	19 mexities. Compliance punch list was completed with the exception of the unitary (or way, research to both, out) was raised to both. Both motors were running at 10.5 ample to the unitary caps (ran out). Skid Readings taken from PLC
24	9.4	10.2	178	13	54	12.0	15.5	2008	1060	2003	2	29	9	11,796	NM	NM	5,2	5	System operational upon annual/departure MID, M10, & M17 true tation bell valves were lightened. Additional LOTO photon were laten for ASOI documents. Sparge readings were
24.5	10	9.7	167	13	48	12.3	18	2051	2013	2048	2	29	0	12,039	NM	NM	5.2	5	System operational upon anivel/departure. 761 & 601 PiD Readings were completed. Additional LOTO pics taken. Waited for PSCAA, but they did not show up - Bidd Readings t
24	15.7	12.0	182	14	57	13.4	15.0	2146	2109	2143	2	30	9	12,420	NM	NM	5.2	0	system oppresioner upon envicedeparture. Wedenie SVE & Sparge webs were shut-off, 701 reduced to 50%, 001 elevated to 55%. Waited for PSCAA, but they stid not show up a from some on,
20	22.1	16.1	193	15.5	62	16.1	14.5	2340	2303	2337	2	30	10	13,728	NM	NM	0.2	\$	System operatorial upon enveloperature 801 reduced to 50% (now both 701.4.001 are (\$ 50%). Binalderough has reached over 10% in carbon beins 1.6.3.
-	- e -	-	-		(e)	-	- 4-1	12	-	-	1.2	-	-			-		3	System operatorial upon arrival, system LOTO upon departure. System shut down for caution replacement
23.5	16.0	13.3	200	15.5	68	15,4	26,0	2411	2373	2408	2	30	11	14,011	NM.	NM	5.8	6	Sptim LOTO upon annul. The tops were removed from the 3 priorary carbon versions. Evoqual changed out carbon and also removed the 4,000 ball of carbon from the last change cystme wate restanted. The system was operational upon departural.
23.5	19,5	18.3	175	13	57	12.5	8.5	2520	2492	2526	2	30	11	14,093	NM	NM	5.0	5	System operational upon aniwelidebarture. Spaces readings were false. PID readings were taken. Martinio upon samples were collected, and upper a sub-
24	20	22	175	13	00	12.0	9.0	2697	2660	2694	2	30	12	14,092	NM	NM	0.2	5	22/2 1 Constituted later any wildowith the Sharen readouts were blan. Of broad off in B-801 and 9.711 View name to Mount fail and the state of the state of the Sharen readout state of the
24	18,2	16,3	208	13	88	12,0	10.0	2843	2829	2884	2	30	12	14.967	NM	NM	6.2	N	(a) blower down upon arrival for high blower outliet tomp. Altern subport was set at 120°F. The lowering factor for temperature systems was the school 50 PVC, which has an upper voter was precisional upon denative. MOTE: Assembling and functional systems are addressed on the school 50 PVC, which has an upper voter was precisional upon denative. MOTE: Assembling and functional systems are addressed on the school 50 PVC, which has an upper voter was precisional upon denative. MOTE: Assembling and functional systems are addressed on the school 50 PVC.
23	8.0	8.1	190	13	64	13	9.0	3035	3019	3054	2	30	13	15.623	NM	NM	81	ie.	
23	7.0	8.0	210	13	89	13.4	8.5	3135	3121	3150	2	30	17	15,830	NM	215.0	G A	0	reside spectration open anywereparture were groups on power interest need to be reparted. Anywere samples and water samples were collected, thichiding FOG earnplate
23	0.0		100	13	76	12.5	0.0	7970	3355	2300		30	12	15 551			12.1	5	The compare the deviation and the particle of the particle of the state and the second ND Is; Hented anemometer was used for this visit. (v) the period upon animal/departure, Balts on B-701 and B-501 were tightened. Photos were taken at potential new measuring well locations. Vac gauges on blower inteleas no
74	80	6.0	107	12	70	197	8.6	2470	3468	TAND	-	00	10	10,001	- COM	- Color	iei i	3	ov mis von en winn winne vesen from now on. System down upon whiel Alerna found onaite PAH-2501 XCH @ 18.11 5/25/14. LAHH-501 VLS @ 14.38 5/25/14. LAHT-501 VLS @ 14.49 5/25/14. B-701 was increased to 32
326	6.6		100	10	10	10.7	0.0	2420	3450	nata	-2		13	10,005	NN	NM	5.0	5	int replaced. Vac gauges on blower intakes need to be replaced. System operational upon deperture. ystem operational upon amvel/deperture, B-701 was increased to 60% and 4 Mercer street wells were closed but soused a VED shutdown after about 1.5hrs, so B-701 was move
27.6	5.5	50	100	16	00	13.3	0,0	2035	30.24	3039	-	-00	14	10,351	000	NM	4.5	-40	Ome on zones D and E wild air sparge tree was discreased to finin on zoons A,B and C. PID readings were taken
22	)		(60)	19	) 58	(12)	1 9	34	392	5/18	2	23	14		17,	746	6	D	11 Wells church Shoups in the way becaused to item on zones AB and C 11 Wells church Shoups . As from I to 45 min in Zones Dick
	1.0	A-1	4				- 7			5									

11 PID was not operating procerty
and the second se
D1
Planting was modified to even out [] to VPCs.
- have been a
rge manifold readings completed.
PID Readings completed
e www.mit. Nelsons.
en from PLC
and a state of 10 8 Amos Allocated managements and the state of 10 8 Amos Allocated managements and the state of 10 8 Amos Allocated managements and the state of 10 8 Amos Allocated managements and the state of th
a preses or routi Amps, Alternipted sensuccessibility to upload program to the PLC.
laken from PLC
modily. The sparge compressor was raised to 100% and the intervals were set to
taken. Bild Readings taken from PLC
ken from PLC
mail breakthrough through primary carbons. Skul Readings taken from PLG
aut from the site. Upon Evoque's departure, the tops were renatated and one
IG SAMPLES COLLECTED
an annung and Wellichte (CAI).
imit of 140°F, which is what both the 701 & 801 alarm selpoints ware set to
h NGTE: Rented anometer was used for this vielt.
ed to be replaced, NOTE: New Dwyer model 474B-1 anonometat was used
N. Air sparge time was increased to timer on all groups. First cardidon water
to 53% and wells M2 and M15 were clound. Air sparge time was increased to
and the second se

	AS1 : \	Nestlake			AS2:	Valley	1		AS3:Mercer	
Valve ID	No.	Zone	Well	Valve ID		Zone	Well	Valve ID	Zone	Well
SV- 2801	1	A) b	AS-1	SV- 2822	1	A	VAS-1	SV- 2836	1 A	MAS-1
SV- 2802	2	AX	AS-6	SV- 2823	2	A	VAS-4	SV- 2837	2 A	MAS-5
SV- 2803	3	A	AS-10	SV- 2824	3	A	VAS-10	SV- 2838	3 A D	MAS-11
SV- 2804	4	A	AS-17	SV- 2825	4	в	VAS-9 🗶	SV- 2839	4 A	MAS-17
SV- 2805	5	B	AS-4	SV- 2826	5	В	VAS-14	SV- 2840	5 A	MAS-18
SV- 2806	6	B	AS-8	SV- 2827	6	C	VAS-2	SV- 2841	6 A	MAS-24
SV- 2807	7	в () [	AS-13	SV- 2828	7	5	VAS-8	SV- 2842	7 B	MAS-3
SV- 2808	8	вИ	AS-16	SV- 2829	8	C	VAS-11	SV- 2843	8 B	MAS-7
SV- 2809	9	B	AS-21	SV- 2830	9	DIS	VAS-3 /	SV- 2844	9 B 👤	MAS-10
SV- 2810	10	С	AS-2	SV- 2831	10	D	VAS-6 🝾	SV- 2845	10 B	MAS-16
SV- 2811	11	ch	AS-7	SV- 2832	11	101	VAS-12	SV- 2846	11 B	MAS-22
SV- 2812	12	c )	AS-11	SV- 2833	12	E	VAS-5	SV- 2847	12 C	MAS-2
SV- 2813	13	c	AS-18	SV- 2834	13	Е	VAS-7	SV- 2848	13 C	MAS-9
SV- 2814	14	CP	AS-5	SV- 2835	14	E	VAS-13	SV- 2849	14 C	MAS-12
SV- 2815	15	0/6 1	-AS-9					SV- 2850	15 C D	MAS-20
SV- 2816	16	D	AS-14				C	SV- 2851	16 C/V	MAS-25
SV- 2817	17	D	AS-19					SV- 2852	17 PLR	MAS-6
SV- 2818	18	E,	AS-3					SV- 2853	18 0	MAS-14
SV- 2819	19	Eh	AS-12					SV- 2854	19 D	MAS-21
SV- 2820	20	εノ	AS-15	1			(	SV- 2855	20 D	MAS-23
SV- 2821	21	E	AS-20				4	SV- 2856	21 D	MAS-26
								SV- 2857	(22 D)	MAS-27
								SV- 2858	23 E	MAS-4
								SV- 2859	24 E	MAS-8
								SV- 2860	25 E	MAS-13
							D	SV- 2861	26 E	MAS-15
								SV- 2862	27 E	MAS-19



Westlake-Mener				an a sister a siste
4/30/14 VACI 185/39.4pm/0/0	@1230	701	801	50
ousite 1100-1315 1412/32341/00 14,967 gal	2/30/12	Slat	16.30st	and the second
1H.0/327pm/0/0	2843	- 75"/73"	75"/73"	12.6/880
701 down your vrival, high bloner outlet T.	2829	0.45-0.72	0.06-0.39	12-195
Saw that is was set @ 120° (801 was running C.118°	2864			13 /2018
Sched 80 spacer T limit is 140° the blower limit is	250°+			
401+801 limits set @ 140°, Fol restricted.		2.	· 花臺市(175)	
1/25/11 11 5	-	and the second		
0,20,10 005 / HT 005/te (2 071519.1				
COUC-72/32/162 51573		701	801	SP
Difficurate 4147 012029127 4700	116,6°	78/78	854/82"	73°/10.7
adaut 16/10 4/87-50 0/62/17 1 430	11T.5"	0.32-0.59	0.14-0.38	137-21
19824 00 0, 0, 0, 17.1 4300		125 23	125 / 22."	1840/11
$\times (.455)(29.5) + y(0.26)(6.5) = 29.5x + 6.5(1-x)=1$	50 73×:	LTSPPM	6.5 pm	
	10 2	THE ALL		

# FAR IN DEALION TADREDAT

א הצנפסו זה היהה ההסורה את האת היה יפולטת שוווים האם ההחתבות ופיעיו גם יישר ספוניות אל נוסייה ביה יפוריו הנת, המרלטות אה הפתיעות היות עובר היות היה היה היא היהה אחר היקור אות האן היות האן היות היה יפורית פרבינות היות ביע ביי בי היתה יהית היה היל ביה היקור הנתעות הגוע מתקוניה היא או היינה גם

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# Acronym List

917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

μg/L μs 1,2-DCA acfm AS	Micrograms per liter Microsiemens 1,2-dichloroethane Actual cubic feet per minute Air sparge	NAI NAPL NEPA NGVD NPDES	Natural attenuation indicators Non-aqueous phase liquid National Environmental Policy Act National Geodetic Vertical Datum National Pollutant Discharge Elimination System
bgs BTEX	Below ground surface Benzene, toluene, ethylbenzene, and total xvienes	O&M ORP	Operations and Maintenance Oxidation-reduction potential
cfm	Cubic feet per minute	OSHA	Occupational Safety and Health Administration
COC CPT DIPE DO DOT DPE DTW EDB EPA ESL ETBE FID fpm GAC gpd gpm GWPTS HVOC	Chain of Custody Cone Penetration (Penetrometer) Test Di-isopropyl ether Dissolved oxygen Department of Transportation Dual-phase extraction Depth to water 1,2-dibromoethane Environmental Protection Agency Environmental Screening level Ethyl tertiary butyl ether Flame-ionization detector Feet per minute Granular activated carbon Gallons per day Gallons per minute Groundwater pump and treat system Halogenated volatile organic compound	OVA P&ID PAH PCB PCE PID PLC POTW PQL PSCAA psi PVC QA/QC RBSL RCRA RL scfm	Organic vapor analyzer Process & Instrumentation Diagram Polycyclic aromatic hydrocarbon Polychlorinated biphenyl Tetrachloroethene or perchloroethylene Photo-ionization detector Programmable logic control Publicly owned treatment works Parts per million by volume Practical quantitation limit Puget Sound Clean Air Agency Pounds per square inch Polyvinyl chloride Quality assurance/quality control Risk-based screening levels Resource Conservation and Recovery Act Reporting limit Standard cubic feet per minute
J	Estimated value between MDL and PQL (RL)	SSTL	Site-specific target level
KCIW LEL LPC LRP LUFT LUST MCL MDL mg/kg mg/L mg/m ³ MPE	King County Industrial Waste Lower explosive limit Liquid-phase carbon Liquid-ring pump Leaking underground fuel tank Leaking underground storage tank Maximum contaminant level Method detection limit Milligrams per kilogram Milligrams per liter Milligrams per cubic meter Multi-phase extraction	STLC SVE SVOC TAME TBA TCE TOC TOG TPHd TPHg TPHmo TPHs	Soluble threshold limit concentration Soil vapor extraction Semivolatile organic compound Tertiary amyl methyl ether Tertiary butyl alcohol Trichloroethene Top of well casing elevation; datum is msl Total oil and grease Total petroleum hydrocarbons as diesel Total petroleum hydrocarbons as gasoline Total petroleum hydrocarbons as motor oil Total petroleum hydrocarbons as stoddard solvent
MRL msl MTBE MTCA	Method reporting limit Mean sea level Methyl tertiary butyl ether Model Toxics Control Act	TRPH UCL USCS USGS UST VCP VFD VOC	Total recoverable petroleum hydrocarbons Upper confidence level Unified Soil Classification System United States Geologic Survey Underground storage tank Voluntary Cleanup Program Variable Frequency Drive Volatile organic compound

VOC VPC Vapor-phase carbon



917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

Appendix A Laboratory Data



May 16, 2014

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10266625

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on May 10, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

ENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC



# **REPORT OF LABORATORY ANALYSIS**


### CERTIFICATIONS

### Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10266625

ace Analytical www.pacelabs.com

### **Minnesota Certification IDs**

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alabama Certification #40770 Alabama Certification #40770 Alaska Certification #: UST-078 Alaska Certification #MN00064 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #: Pace Georgia Certification #: 959 Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909 Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace Montana Certification #: MT0092 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 Wisconsin Certification #: 999407970 West Virginia Certification #: 382 West Virginia TO-15 Approval West Virginia DHHR #:9952C



# Pace Analytical®

### SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10266625

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10266625001	V-DSCHG-1	Air	05/08/14 11:15	05/10/14 09:40
10266625002	V-DSCHG-2	Air	05/08/14 11:20	05/10/14 09:40
10266625003	V-DSCHG-3	Air	05/08/14 11:25	05/10/14 09:40
10266625004	V-INT-1	Air	05/08/14 11:50	05/10/14 09:40
10266625005	V-INT-2	Air	05/08/14 11:45	05/10/14 09:40
10266625006	V-INT-3	Air	05/08/14 11:35	05/10/14 09:40
10266625007	V-INF-1	Air	05/08/14 12:00	05/10/14 09:40
10266625008	V-INF-2	Air	05/08/14 12:05	05/10/14 09:40
10266625009	V-INF-3	Air	05/08/14 12:10	05/10/14 09:40



Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10266625

Pace Analytical

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Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10266625001	V-DSCHG-1	TO-15	AH2	6	PASI-M
10266625002	V-DSCHG-2	TO-15	AH2	6	PASI-M
10266625003	V-DSCHG-3	TO-15	AH2	6	PASI-M
10266625004	V-INT-1	TO-15	AH2	6	PASI-M
10266625005	V-INT-2	TO-15	AH2	6	PASI-M
10266625006	V-INT-3	TO-15	AH2	6	PASI-M
10266625007	V-INF-1	TO-15	AH2	6	PASI-M
10266625008	V-INF-2	TO-15	AH2	6	PASI-M
10266625009	V-INF-3	TO-15	AH2	6	PASI-M



### Project: AOC 1396-P66 Westlake/Mercer

### Pace Project No.: 10266625

Sample: V-DSCHG-1	Lab ID: 10	266625001	Collected: 05/08/1	4 11:15	Received: 0	5/10/14 09:40 N	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	a/m3	6.5	20		05/10/14 16:20	71-43-2	
Ethylbenzene	ND u	g/m3	17.6	20		05/10/14 16:20	100-41-4	
THC as Gas	<b>5110</b> u	g/m3	1220	20		05/10/14 16:20		IS
Toluene	ND u	g/m3	15.4	20		05/10/14 16:20	108-88-3	
m&p-Xylene	ND u	g/m3	35.2	20		05/10/14 16:20	179601-23-1	
o-Xylene	ND u	g/m3	17.6	20		05/10/14 16:20	95-47-6	
Sample: V-DSCHG-2	Lab ID: 10	266625002	Collected: 05/08/1	4 11:20	Received: 0	5/10/14 09:40 N	Atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
			0.5			05/40/4440.40	74 40 0	
Benzene Ethulh an ear a	ND u	ig/m3	0.0	20		05/10/14 16:42	71-43-2	
	ND u	1g/113	17.0	20		05/10/14 16:42	100-41-4	
Toluene	<b>JUZU</b> U	ig/m3	1220	20		05/10/14 10:42	108-88-3	
m&n-Xylene		ig/m3	35.2	20		05/10/14 16:42	179601-23-1	
		ig/m3	17.6	20		05/10/14 16:42	95-47-6	
		ig/1110	17.0	20		03/10/14 10.42	55 47 6	
Sample: V-DSCHG-3	Lab ID: 10	266625003	Collected: 05/08/1	4 11:25	Received: 0	5/10/14 09:40 N	Atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıg/m3	6.5	20		05/10/14 17:04	71-43-2	
Ethylbenzene	ND u	ıg/m3	17.6	20		05/10/14 17:04	100-41-4	
THC as Gas	<b>3970</b> u	ıg/m3	1220	20		05/10/14 17:04		
Toluene	ND u	ıg/m3	15.4	20		05/10/14 17:04	108-88-3	
m&p-Xylene	ND u	ıg/m3	35.2	20		05/10/14 17:04	179601-23-1	
o-Xylene	ND u	ig/m3	17.6	20		05/10/14 17:04	95-47-6	
Sample: V-INT-1	Lab ID: 10	266625004	Collected: 05/08/1	4 11:50	Received: 0	5/10/14 09:40 N	fatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıg/m3	6.5	20		05/10/14 17:25	71-43-2	
Ethylbenzene	ND u	ig/m3	17.6	20		05/10/14 17:25	100-41-4	
THC as Gas	<b>4120</b> u	ıg/m3	1220	20		05/10/14 17:25		
Toluene	ND u	ıg/m3	15.4	20		05/10/14 17:25	108-88-3	
m&p-Xylene	ND u	ıg/m3	35.2	20		05/10/14 17:25	179601-23-1	
o-Xylene	ND u	ıg/m3	17.6	20		05/10/14 17:25	95-47-6	

### **REPORT OF LABORATORY ANALYSIS**

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### Project: AOC 1396-P66 Westlake/Mercer

### Pace Project No.: 10266625

Sample: V-INT-2	Lab ID: 10266625005	Collected: 05/08/14 1	1:45	Received: 05	5/10/14 09:40 N	latrix: Air	
Parameters	Results Units	Report Limit D	F	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-1	5					
Benzene	ND ug/m3	6.5 2	0		05/10/14 17:47	71-43-2	
Ethvlbenzene	ND ua/m3	17.6 2	0		05/10/14 17:47	100-41-4	
THC as Gas	<b>3310</b> ug/m3	1220 2	0		05/10/14 17:47		
Toluene	ND ug/m3	15.4 2	0		05/10/14 17:47	108-88-3	
m&p-Xylene	ND ug/m3	35.2 2	0		05/10/14 17:47	179601-23-1	
o-Xylene	ND ug/m3	17.6 2	0		05/10/14 17:47	95-47-6	
Sample: V-INT-3	Lab ID: 10266625006	Collected: 05/08/14 1 ²	1:35	Received: 0	5/10/14 09:40 N	latrix: Air	
Parameters	Results Units	Report Limit D	F	Prepared	Analyzed	CAS No	Qual
				Toparoa			Quui
TO15 MSV AIR	Analytical Method: TO-1	5					
Benzene	ND ug/m3	6.5 2	0		05/10/14 18:08	71-43-2	
Ethylbenzene	ND ug/m3	17.6 2	0		05/10/14 18:08	100-41-4	
THC as Gas	<b>9300</b> ug/m3	1220 2	0		05/10/14 18:08		
Toluene	ND ug/m3	15.4 2	0		05/10/14 18:08	108-88-3	
m&p-Xylene	ND ug/m3	35.2 2	0		05/10/14 18:08	179601-23-1	
o-Xylene	ND ug/m3	17.6 2	0		05/10/14 18:08	95-47-6	
Sample: V-INF-1	Lab ID: 10266625007	Collected: 05/08/14 12	2:00	Received: 0	5/10/14 09:40 N	latrix: Air	
Parameters	Results Units	Report Limit D	F	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-1	5					
Benzene	<b>28.4</b> ug/m3	16.2 5	0		05/10/14 18:30	71-43-2	
Ethylbenzene	<b>745</b> ug/m3	44.0 5	0		05/10/14 18:30	100-41-4	
THC as Gas	<b>107000</b> ug/m3	3040 5	0		05/10/14 18:30		
Toluene	<b>483</b> ug/m3	38.5 5	0		05/10/14 18:30	108-88-3	
m&p-Xylene	<b>7240</b> ug/m3	176 10	00		05/10/14 19:35	179601-23-1	
o-Xylene	<b>2720</b> ug/m3	44.0 5	0		05/10/14 18:30	95-47-6	
Sample: V-INF-2	Lab ID: 10266625008	Collected: 05/08/14 12	2:05	Received: 0	5/10/14 09:40 N	latrix: Air	
Parameters	Results Units	Report Limit D	F	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-1						
Benzene		- 16.0 5	0		05/10/14 19-52	71-13-2	
Ethylbenzene	711 ug/m3		0		05/10/14 10.52	100_11 1	
	103000 ug/m3	44.0 D	0		05/10/14 10.52	100-41-4	
Toluono		3040 D	0		05/10/14 10.52	108-88 3	
m&n-Xylene	<b>435</b> ug/115 <b>8340</b> ug/m3	176 10	0		05/10/14 10:52	170601-22-1	
o-Xvlene	<b>2660</b> ug/m3	44.0 5	0		05/10/14 18:52	95-47-6	
,		11.0 0	-		20, 10, 11, 10.02		

### **REPORT OF LABORATORY ANALYSIS**

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### Project: AOC 1396-P66 Westlake/Mercer

### Pace Project No.: 10266625

Sample: V-INF-3	Lab ID: 10266	625009 Collect	ted: 05/08/14	12:10	Received: 05/	10/14 09:40 Ma	atrix: Air	
Parameters	Results	Units Re	eport Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Metho	d: TO-15						
Benzene	<b>32.5</b> ug/m	13	16.2	50		05/10/14 19:13	71-43-2	
Ethylbenzene	<b>1060</b> ug/m	13	44.0	50		05/10/14 19:13	100-41-4	
THC as Gas	<b>134000</b> ug/m	13	3040	50		05/10/14 19:13		
Toluene	<b>641</b> ug/m	13	38.5	50		05/10/14 19:13	108-88-3	
m&p-Xylene	<b>11600</b> ug/m	13	176	100		05/10/14 20:18	179601-23-1	
o-Xylene	<b>3690</b> ug/m	13	44.0	50		05/10/14 19:13	95-47-6	



### **QUALITY CONTROL DATA**

Project:	AOC 139	6-P66 Westlake/Mercer							
Pace Project No.:	1026662	5							
QC Batch:	AIR/202	229	Analysis M	ethod:	TO	-15			
QC Batch Method:	TO-15		Analysis De	escription:	то	15 MSV AIR	R Low Level		
Associated Lab San	nples: 1 1	0266625001, 10266625002 0266625008, 10266625009	, 10266625003,	1026662500	04, 102	266625005,	10266625006	, 10266625007,	
METHOD BLANK:	1677884		Matrix	k: Air					
Associated Lab San	nples: 1 1	0266625001, 10266625002 0266625008, 10266625009	, 10266625003,	1026662500	04, 102	266625005,	10266625006	, 10266625007,	
			Blank	Reportin	g				
Paran	neter	Units	Result	Limit		Analyze	d Qual	ifiers	
Benzene		ug/m3	NE	) (	0.32	05/10/14 1	3:25		
Ethylbenzene		ug/m3	NE	) (	88.0	05/10/14 13	3:25		
m&p-Xylene		ug/m3	NE	)	1.8	05/10/14 13	3:25		
o-Xylene		ug/m3	NE	) (	0.88	05/10/14 13	3:25		
THC as Gas		ug/m3	NE	) (	60.8	05/10/14 13	3:25		
Toluene		ug/m3	NE	) (	0.77	05/10/14 1	3:25		
LABORATORY COM	NTROL SA	MPLE: 1677885							
			Spike	LCS	I	LCS	% Rec		
Paran	neter	Units	Conc.	Result	%	6 Rec	Limits	Qualifiers	
Benzene		ug/m3	32.5	34.3		106	69-134		
Ethylbenzene		ug/m3	44.2	43.0		97	73-139		
m&p-Xylene		ug/m3	44.2	42.5		96	73-139		
o-Xylene		ug/m3	44.2	45.0		102	71-138		
THC as Gas		ug/m3	3520	2750		78	65-136		
Toluene		ug/m3	38.3	34.7		90	67-133		



### QUALIFIERS

### Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10266625

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

### ANALYTE QUALIFIERS

IS The internal standard recovery associated with this result exceeds the lower control limit. The reported result should be considered an estimated value.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10266625

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10266625001	V-DSCHG-1	 TO-15	AIR/20229		
10266625002	V-DSCHG-2	TO-15	AIR/20229		
10266625003	V-DSCHG-3	TO-15	AIR/20229		
10266625004	V-INT-1	TO-15	AIR/20229		
10266625005	V-INT-2	TO-15	AIR/20229		
10266625006	V-INT-3	TO-15	AIR/20229		
10266625007	V-INF-1	TO-15	AIR/20229		
10266625008	V-INF-2	TO-15	AIR/20229		
10266625009	V-INF-3	TO-15	AIR/20229		

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: Company: Cardno ATC Address: 7070 SW Fir Loop, Suite 100 Tigard, OR 97223 Email To: kyle.sattler@cardno.com Phone: 503 430 6696 [Fax: Requested Duo Date/TAT: 10 Day (Standard)	Section B Required Projec Report To: Ky Copy To: Ke Purchase Order I Client Project ID: Container Order	t Info (19 Sa allh F No. Numb	mation: attler ox 031326 C 1396 er:	03B - P66 W	/esllake/	Mercer		Soctio Invoic Attenti Compt Addres Pace ( Pace   Pace	e Infr on: any N ss: Quote Projec	ormati lame: a Rofer ct Mani e #: 2	enco: Iger:	32.	lenn #	i Gro: 2. A	do				NGO : NGOY PSCA WA	A	1	Of	
SAMPLE ID MATROX One Character per box. (A-Z, 0-9 /, -) Product Sample kts must be unique ca with A A Other Tissue	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SALPHE TYPE (C-GRAB C-COMP)	STA	COLL RT	ECTED	D	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unprotection	Pre	HC	HORN	Ma28203	Methanol Other	TO-15								
V-DSCHG-1           V-DSCHG-2           V-DSCHG-3           V-INT-1           V-INT-2           V-INT-3           V-INF-1           V-INF-3		3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			05/08/14 05/08/14 05/08/14 05/08/14 05/08/14 05/08/14 05/08/14 05/08/14	11:15 11:20 11:25 11:50 11:45 11:35 12:00 12:05 12:10		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2															
				Simpl PR SK	INT Name Chature	di SAMP		El el								3. gnec	S-0 S/c	124 9 9 1	 TEMPINC	8	Received on V	Custody Sealed	Samples Intect

.

	Document Na Air Sample Condition I	me: Ipon Recolat	Document Revised: 26Dec2013 Page 1 of 1	
Pace Analytical	Document N F-MN-A-106-m	0.: pv.09	issuing Authority: Pace Minnesota Quality Office	
Counter: SFed Ex UPac	Pro <u>477</u> 5USPSClien eOther:	t 102666	: 10266625	
racking Number: $37793335$ istody Seal on Cooler/Box Present? Sea cking Material: Bubble Wrap Bubb mp. (TO17 and TO13 samples only) ('C): $TO^{-10}$	Seals Intac No Seals Intac Se Bags □Foarn 240one Corrected Temp (*C):	t? Dytes IN Other: Thermom. Use	Optional:         Proj. Due Date:         Proj. Name:           Temp Blank rec:         Yes           B88A912167504         72337080           B88A9132521491         B80512447           B88A9132521491         B80512447	s <b>Ju</b> o
emp should be above freezing to 6°C Correction ne of ice Received Blue Wet Mor	e	Date & Initials	Comments:	
Chain of Custody Present?	Nes No	<u>□N/A 1.</u>		
Chain of Custody Filled Out?	Stes No	□N/A 2.		
Chain of Custody Relinquished?	Yes Stro	<u>□n/a 3.</u>		
Sampler Name and/or Signature on COC?	Stes Norroy	<u>N/A 4.</u>		
Samples Arrived within Hold Time?	The Third Th	□N/A 5		
Short Hold Time Analysis (<72 hr)?	No No	□N/A 6		
Rush Turn Around Time Requested?	Yes XNo	□N/A 7.		
Sufficient Volume?	No No	□N/A 8.		
Correct Containers Used?		□N/A 9.		
-Pace Containers Lised?				<b>.</b>
		□N/A 10.		
Andine Are had		11.		
Sample Labels Match COC?	Bores INO	□N/A 12.		
Samples Received: 18 Air bags	(9 samples)			
Canisters	Flow C	controllers	Stand Alone G	
Sample Number Can ID	Sample Number	Can ID	Sample Number Can IU	
CLIENT NOTIFICATION/RESOLUTION Person Contacted: Comments/Resolution:		Date/Time:	Field Data Required?	
Project Manager Review:	LoSS Arch Carolina compliance samples, containers)	Copy of this form will	Date: _5/12/14 be sent to the North Carolina DEHNR Certification Off	lice ( 1.e



April 23, 2014

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

### RE: Project: AOC 1396 -P66 Westlake/Mercer Pace Project No.: 10263855

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

ENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





### CERTIFICATIONS

Project: AOC 1396 -P66 Westlake/Mercer

Pace Project No.: 10263855

ace Analytical www.pacelabs.com

### **Minnesota Certification IDs**

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alabama Certification #40770 Alabama Certification #40770 Alaska Certification #: UST-078 Alaska Certification #MN00064 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #: Pace Georgia Certification #: 959 Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909

Minnesota Certification #: 027-053-137 Mississippi Certification #: Pace Montana Certification #: MT0092 Nebraska Certification #: Pace New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 Wisconsin Certification #: 999407970 West Virginia Certification #: 382 West Virginia TO-15 Approval West Virginia DHHR #:9952C





### SAMPLE SUMMARY

Project: AOC 1396 -P66 Westlake/Mercer

Pace Project No.: 10263855 **Date Collected Date Received** Lab ID Sample ID Matrix V-DSCHG-1 10263855001 Air 04/16/14 12:35 04/18/14 09:05 10263855002 V-DSCHG-2 Air 04/16/14 12:40 04/18/14 09:05 V-DSCHG-3 10263855003 Air 04/16/14 12:45 04/18/14 09:05 V-INT-1 04/16/14 13:10 10263855004 Air 04/18/14 09:05 10263855005 V-INT-2 04/16/14 13:00 04/18/14 09:05 Air 10263855006 V-INT-3 Air 04/16/14 12:50 04/18/14 09:05 10263855007 V-INF-1 04/16/14 13:20 04/18/14 09:05 Air 10263855008 V-INF-2 Air 04/16/14 13:25 04/18/14 09:05 04/18/14 09:05 10263855009 V-INF-3 Air 04/16/14 13:30



### SAMPLE ANALYTE COUNT

Project:AOC 1396 -P66 Westlake/MercerPace Project No.:10263855

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10263855001	V-DSCHG-1	TO-15	DR1	6	PASI-M
10263855002	V-DSCHG-2	TO-15	DR1	6	PASI-M
10263855003	V-DSCHG-3	TO-15	DR1	6	PASI-M
10263855004	V-INT-1	TO-15	DR1	6	PASI-M
10263855005	V-INT-2	TO-15	DR1	6	PASI-M
10263855006	V-INT-3	TO-15	DR1	6	PASI-M
10263855007	V-INF-1	TO-15	DR1	6	PASI-M
10263855008	V-INF-2	TO-15	DR1	6	PASI-M
10263855009	V-INF-3	TO-15	DR1	6	PASI-M



### Project: AOC 1396 -P66 Westlake/Mercer

### Pace Project No.: 10263855

Sample: V-DSCHG-1	Lab ID: 10	263855001	Collected: 04/16/1	4 12:35	Received: 0	4/18/14 09:05 N	/latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıq/m3	6.5	20		04/18/14 17:10	71-43-2	
Ethylbenzene	ND u	ig/m3	17.6	20		04/18/14 17:10	100-41-4	
THC as Gas	ND u	ig/m3	1220	20		04/18/14 17:10		
Toluene	ND u	ig/m3	15.4	20		04/18/14 17:10	108-88-3	
m&p-Xylene	ND u	ig/m3	35.2	20		04/18/14 17:10	179601-23-1	
o-Xylene	ND u	ıg/m3	17.6	20		04/18/14 17:10	95-47-6	
Sample: V-DSCHG-2	Lab ID: 10	263855002	Collected: 04/16/1	4 12:40	Received: 0	4/18/14 09:05 N	Atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No	Qual
		01110						
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıg/m3	6.5	20		04/18/14 17:32	71-43-2	
Ethylbenzene	ND u	ıg/m3	17.6	20		04/18/14 17:32	100-41-4	
THC as Gas	ND u	ıg/m3	1220	20		04/18/14 17:32		
Toluene	<b>30.3</b> U	ıg/m3	15.4	20		04/18/14 17:32	108-88-3	
m&p-Xylene	ND u	ıg/m3	35.2	20		04/18/14 17:32	179601-23-1	
o-Xylene	ND u	ıg/m3	17.6	20		04/18/14 17:32	95-47-6	
Sample: V-DSCHG-3	Lab ID: 10	263855003	Collected: 04/16/1	4 12:45	Received: 0	4/18/14 09:05 N	Aatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıg/m3	6.5	20		04/18/14 17:53	71-43-2	
Ethylbenzene	ND u	ig/m3	17.6	20		04/18/14 17:53	100-41-4	
THC as Gas	ND u	ig/m3	1220	20		04/18/14 17:53		
Toluene	<b>30.8</b> U	ig/m3	15.4	20		04/18/14 17:53	108-88-3	
m&p-Xylene	ND u	ig/m3	35.2	20		04/18/14 17:53	179601-23-1	
o-Xylene	ND u	ıg/m3	17.6	20		04/18/14 17:53	95-47-6	
Sample: V-INT-1	Lab ID: 10	263855004	Collected: 04/16/1	4 13:10	Received: 0	4/18/14 09:05 N	Aatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	ıq/m3	6.5	20		04/18/14 18:15	71-43-2	
Ethylbenzene	ND u	iq/m3	17.6	20		04/18/14 18:15	100-41-4	
THC as Gas	ND u	iq/m3	1220	20		04/18/14 18:15		
Toluene	<b>31.5</b> u	iq/m3	15.4	20		04/18/14 18:15	108-88-3	
m&p-Xylene	ND u	iq/m3	35.2	20		04/18/14 18:15	179601-23-1	
o-Xylene	ND u	- ig/m3	17.6	20		04/18/14 18:15	95-47-6	



### Project: AOC 1396 -P66 Westlake/Mercer

### Pace Project No.: 10263855

Sample: V-INT-2	Lab ID: 102638	55005	Collected: 04/16/1	4 13:00	Received: 04	4/18/14 09:05 N	/latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method:	TO-15						
Benzene	ND ug/m3		6.5	20		04/18/14 18:37	71-43-2	
Ethylbenzene	ND ug/m3		17.6	20		04/18/14 18:37	100-41-4	
THC as Gas	ND ug/m3		1220	20		04/18/14 18:37		
Toluene	<b>22.9</b> ug/m3		15.4	20		04/18/14 18:37	108-88-3	
m&p-Xylene	ND ug/m3		35.2	20		04/18/14 18:37	179601-23-1	
o-Xylene	ND ug/m3		17.6	20		04/18/14 18:37	95-47-6	
Sample: V-INT-3	Lab ID: 102638	55006	Collected: 04/16/1	4 12:50	Received: 0	4/18/14 09:05 N	Aatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
		TO 15						
	Analytical Method:	10-15						
Benzene	ND ug/m3		6.5	20		04/18/14 18:58	71-43-2	
Ethylbenzene	ND ug/m3		17.6	20		04/18/14 18:58	100-41-4	
THC as Gas	ND ug/m3		1220	20		04/18/14 18:58		
Toluene	<b>17.8</b> ug/m3		15.4	20		04/18/14 18:58	108-88-3	
m&p-Xylene	ND ug/m3		35.2	20		04/18/14 18:58	179601-23-1	
o-Xylene	ND ug/m3		17.6	20		04/18/14 18:58	95-47-6	
Sample: V-INF-1	Lab ID: 102638	55007	Collected: 04/16/1	4 13:20	Received: 04	4/18/14 09:05 N	Aatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method:	TO-15						
Benzene	<b>119</b> ug/m3		16.2	50		04/18/14 19:20	71-43-2	
Ethylbenzene	<b>1430</b> ug/m3		44.0	50		04/18/14 19:20	100-41-4	
THC as Gas	<b>156000</b> ug/m3		3040	50		04/18/14 19:20		
Toluene	<b>2050</b> ug/m3		38.5	50		04/18/14 19:20	108-88-3	
m&p-Xylene	<b>9170</b> ug/m3		176	100		04/19/14 22:26	179601-23-1	
o-Xylene	<b>3630</b> ug/m3		44.0	50		04/18/14 19:20	95-47-6	
Sample: V-INF-2	Lab ID: 102638	55008	Collected: 04/16/1	4 13:25	Received: 04	4/18/14 09:05 N	Aatrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method:	TO-15						
Benzene	<b>84.8</b> ua/m3		16.2	50		04/18/14 19.42	71-43-2	
Ethylbenzene	988 ug/m3		44 0	50		04/18/14 19:42	100-41-4	
THC as Gas	162000 ug/m3		3040	50		04/18/14 19:42		
Toluene	1420 ug/m3		38 5	50		04/18/14 19:42	108-88-3	
m&p-Xvlene	5510 ug/m3		176	100		04/19/14 22:47	179601-23-1	
o-Xylene	<b>2530</b> ug/m3		44.0	50		04/18/14 19:42	95-47-6	

### **REPORT OF LABORATORY ANALYSIS**

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Project: AOC 1396 -P66 Westlake/Mercer

### Pace Project No.: 10263855

Sample: V-INF-3	Lab ID: 1026385500	9 Collected: 04/16/1	4 13:30	Received: 04	4/18/14 09:05 N	latrix: Air	
Parameters	Results Units	s Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-	15					
Benzene	<b>78.2</b> ug/m3	16.2	50		04/18/14 20:03	71-43-2	
Ethylbenzene	<b>882</b> ug/m3	44.0	50		04/18/14 20:03	100-41-4	
THC as Gas	<b>167000</b> ug/m3	3040	50		04/18/14 20:03		
Toluene	<b>1320</b> ug/m3	38.5	50		04/18/14 20:03	108-88-3	
m&p-Xylene	6860 ug/m3	88.0	50		04/18/14 20:03	179601-23-1	
o-Xylene	<b>2290</b> ug/m3	44.0	50		04/18/14 20:03	95-47-6	



### **QUALITY CONTROL DATA**

Project:	AOC 1	396 -P66 Westlake/Mercer						
Pace Project No.:	10263	855						
QC Batch:	AIR/1	19990	Analysis M	ethod:	TO-15			
QC Batch Method:	TO-1	5	Analysis D	escription:	TO15 MSV AIR	Low Level		
Associated Lab Sar	nples:	10263855001, 10263855002, 10263855008, 10263855009	10263855003,	10263855004,	10263855005,	10263855006,	10263855007,	
METHOD BLANK:	16603	18	Matri	x: Air				
Associated Lab Sar	mples:	10263855001, 10263855002, 10263855008, 10263855009	10263855003,	10263855004,	10263855005,	10263855006,	10263855007,	
			Blank	Reporting				
Parar	neter	Units	Result	Limit	Analyzed	d Quali	fiers	
Benzene		ug/m3	NE	0.3	04/18/14 11	:04		
Ethylbenzene		ug/m3	NE	3.0 0.8	8 04/18/14 11	:04		
m&p-Xylene		ug/m3	NE	) 1	.8 04/18/14 11	:04		
o-Xylene		ug/m3	NE	0.0	8 04/18/14 11	:04		
THC as Gas		ug/m3	NE	<b>b</b> 60	.8 04/18/14 11	:04		
loluene		ug/m3	NL	0.7	7 04/18/14 11	:04		
LABORATORY CO	NTROL	SAMPLE: 1660319						
			Spike	LCS	LCS	% Rec		
Parar	neter	Units	Conc.	Result	% Rec	Limits	Qualifiers	
Benzene		ug/m3	32.5	32.0	99	69-134		
Ethylbenzene		ug/m3	44.2	38.4	87	73-139		
m&p-Xylene		ug/m3	44.2	39.5	89	73-139		
o-Xylene		ug/m3	44.2	39.2	89	71-138		
THC as Gas		ug/m3	3520	3100	88	65-136		
Toluene		ug/m3	38.3	32.8	85	67-133		
SAMPLE DUPLICA	TE: 16	660514						
			10262374001	Dup		Max		
Parar	neter	Units	Result	Result	RPD	RPD	Qualifiers	
Benzene		ug/m3	NE	) N	D		25	
Ethylbenzene		ug/m3	NE	) 1	J		25	
m&p-Xylene		ug/m3	3.8	3 3	.9	3	25	
o-Xylene		ug/m3	1.8	3 2	.0	12	25	
THC as Gas		ug/m3	2890	) 292	20	1	25	
Toluene		ug/m3	3.8	3 3	.9	2	25	

**REPORT OF LABORATORY ANALYSIS** 



### QUALIFIERS

Project: AOC 1396 -P66 Westlake/Mercer

Pace Project No.: 10263855

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-M Pace Analytical Services - Minneapolis



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AOC 1396 -P66 Westlake/Mercer

Pace Project No.: 10263855

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10263855001	V-DSCHG-1	 TO-15	AIR/19990		
10263855002	V-DSCHG-2	TO-15	AIR/19990		
10263855003	V-DSCHG-3	TO-15	AIR/19990		
10263855004	V-INT-1	TO-15	AIR/19990		
10263855005	V-INT-2	TO-15	AIR/19990		
10263855006	V-INT-3	TO-15	AIR/19990		
10263855007	V-INF-1	TO-15	AIR/19990		
10263855008	V-INF-2	TO-15	AIR/19990		
10263855009	V-INF-3	TO-15	AIR/19990		

e Analytical"	120 2000000 204 5
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# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Prove Analytical"	Document Name: Cooler Transfer Check List	Revised Date: 23Apr2013 Page 1 of 1
PaceAnalylical	Document Number: F-MN-C-120-rev.01	Issuing Authority: Pace Minnesota Quality Office

## **Cooler Transfer Check List**

Client:	Cardne	2 ATC		
Project Manager:	Jenni	Gro	<u>G</u>	
Profile/Line #:		ogaan ay saa saa saa saa saa saa saa saa saa		
Received with Custod	ly Seal:	Yes	No	
Custody Seal Intact:	Yes	No	NA	
Temperature C: IR Gun # IR1 IR2 Samples on ic Rush/Short Hold:	Temp Read	Correc	egun	Correction Factor
Containers Intact:	Yes	No		· ·
Re-packed and Re-lo	ed:	<u> </u>		
Temp Blank Included	: Yes	No		
Shipped By/Date:	MO	<u>_</u>	1-17-14	

Notes:

Pace Analytical*	Document N Air Sample Condition Document I F-MN-A-106-	ame: Upon Receipt No.: rev.09	Document Revised: 26Dec Page 1 of 1 Issuing Authority: Pace Minnesota Quality O	2013 ffice
Air Sample Condition Upon Receipt Courier: Fed Ex U Commercial P	Pr ATC ps USPS Client ace Other: 2 21 UG02	nt 10263855	1026385 	5
Tracking Number: 0+T-1-9	52 9102		Optional: Proj. Due Date:	Proj. Name:
Custody Seal on Cooler/Box Present?	es No Seals Inta	ict: Ares []100		
Packing Material: Bubble Wrap Bub Temp. (TO17 and TO13 samples only) (°C): Temp should be above freezing to 6°C Correction Fype of ice Received Blue Wet More	ND Corrected Temp (°C): A n Factor: AMDIENT ne	e Other: Mb Thermom. Used: Date & Initials of P	B88A912167504 B88A9132521491 erson Examining Contents:	12337080 172337080 180512447 180512447
			Comments:	
Chain of Custody Present?	Yes No	<u>N/A</u> 1.		
Chain of Custody Filled Out?	Yes No	N/A 2.		
Chain of Custody Relinquished?	, Yes No	<u>N/A</u> 3.		
Sampler Name and/or Signature on COC?	Yes No	<u>N/A 4.</u>		
Samples Arrived within Hold Time?	Yes No	<u>LIN/A</u> 5.	a our a loft	1
Short Hold Time Analysis (<72 hr)?	Yes No	UN/A 6.	IVUN S REE	
Rush Turn Around Time Requested?	Yes No	<u>N/A</u> 7.		
Sufficient Volume?	Yes No.	<u>N/A</u> 8.		
Correct Containers Used?	Yes 🗌 No	□N/A 9.		
-Pace Containers Used?	Yes No	<u> </u>		
Containers Intact?	Yes No	<u>N/A</u> 10.		
Media: HW 1029	·	11.		
Sample Labels Match COC?	Yes No	□N/A 12.		
Samples Received: 18 218 bar	5 12 Der 521	mole	1	
Canisters	Flow C	controllers	Stand	Alone G
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		Date/Time:	Field Data Required?	Yes No
Person Contacted: Comments/Resolution:			•	
Person Contacted:				
Person Contacted: Comments/Resolution:				

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina Denix Certification Once (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

July 14, 2014

Kyle Sattler Cardno ATC 7070 SW Fir Loop Suite 100 Portland, OR 97223

### RE: Project: AOC 1396-P66 Westlake/Mercer Pace Project No.: 10272237

Dear Kyle Sattler:

Enclosed are the analytical results for sample(s) received by the laboratory on June 27, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

JENNI GROSS

Jennifer Gross jennifer.gross@pacelabs.com Project Manager

Enclosures

cc: Keith Fox, Cardno ATC





Pace Analytical Services, Inc. 1700 Elm Street - Suite 200 Minneapolis, MN 55414 (612)607-1700

### CERTIFICATIONS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10272237

### **Minnesota Certification IDs**

1700 Elm Street SE Suite 200, Minneapolis, MN 55414 A2LA Certification #: 2926.01 Alabama Certification #40770 Alabama Certification #40770 Alaska Certification #: UST-078 Alaska Certification #MN00064 Arizona Certification #: AZ-0014 Arkansas Certification #: 88-0680 California Certification #: 01155CA Colorado Certification #Pace Connecticut Certification #: PH-0256 EPA Region 8 Certification #: 8TMS-L Florida/NELAP Certification #: E87605 Guam Certification #: Pace Georgia Certification #: 959 Idaho Certification #: MN00064 Hawaii Certification #MN00064 Illinois Certification #: 200011 Indiana Certification#C-MN-01 Iowa Certification #: 368 Kansas Certification #: E-10167 Kentucky Dept of Envi. Protection - DW #90062 Kentucky Dept of Envi. Protection - WW #:90062 Louisiana DEQ Certification #: 3086 Louisiana DHH #: LA140001 Maine Certification #: 2013011 Maryland Certification #: 322 Michigan DEPH Certification #: 9909 Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace Montana Certification #: MT0092 Nebraska Certification #: Pace New Jersey Certification #: MN-002 New Jersey Certification #: MN-002 New York Certification #: 11647 North Carolina Certification #: 530 North Carolina State Public Health #: 27700 North Dakota Certification #: R-036 Ohio EPA #: 4150 Ohio VAP Certification #: CL101 Oklahoma Certification #: 9507 Oregon Certification #: MN200001 Oregon Certification #: MN300001 Pennsylvania Certification #: 68-00563 Puerto Rico Certification Saipan (CNMI) #:MP0003 South Carolina #:74003001 Texas Certification #: T104704192 Tennessee Certification #: 02818 Utah Certification #: MN000642013-4 Virginia DGS Certification #: 251 Virginia/VELAP Certification #: Pace Washington Certification #: C486 Wisconsin Certification #: 999407970 West Virginia Certification #: 382 West Virginia TO-15 Approval West Virginia DHHR #:9952C



### SAMPLE SUMMARY

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10272237

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10272237001	V-DSCHG-1	Air	06/25/14 09:00	06/27/14 10:00
10272237002	V-DSCHG-2	Air	06/25/14 09:05	06/27/14 10:00
10272237003	V-DSCHG-3	Air	06/25/14 09:10	06/27/14 10:00
10272237004	V-INT-1	Air	06/25/14 09:15	06/27/14 10:00
10272237005	V-INT-2	Air	06/25/14 09:20	06/27/14 10:00
10272237006	V-INT-3	Air	06/25/14 09:25	06/27/14 10:00
10272237007	V-INF-1	Air	06/25/14 09:30	06/27/14 10:00
10272237008	V-INF-2	Air	06/25/14 09:35	06/27/14 10:00
10272237009	V-INF-3	Air	06/25/14 09:40	06/27/14 10:00



### SAMPLE ANALYTE COUNT

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10272237

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10272237001	V-DSCHG-1	TO-15	DL1	6	PASI-M
10272237002	V-DSCHG-2	TO-15	DL1	6	PASI-M
10272237003	V-DSCHG-3	TO-15	DL1	6	PASI-M
10272237004	V-INT-1	TO-15	DL1	6	PASI-M
10272237005	V-INT-2	TO-15	DL1	6	PASI-M
10272237006	V-INT-3	TO-15	DL1	6	PASI-M
10272237007	V-INF-1	TO-15	DL1	6	PASI-M
10272237008	V-INF-2	TO-15	DL1	6	PASI-M
10272237009	V-INF-3	TO-15	DL1	6	PASI-M



### Project: AOC 1396-P66 Westlake/Mercer

### Pace Project No.: 10272237

Sample: V-DSCHG-1	Lab ID: 102	272237001	Collected: 06/25/	14 09:00	Received: (	06/27/14 10:00 N	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	<b>20.6</b> u	g/m3	10.9	33.6		07/13/14 17:08	71-43-2	A4
Ethylbenzene	ND u	g/m3	29.6	33.6		07/13/14 17:08	100-41-4	
THC as Gas	ND u	g/m3	2040	33.6		07/13/14 17:08		
Toluene	<b>36.5</b> u	g/m3	25.9	33.6		07/13/14 17:08	108-88-3	
m&p-Xylene	ND u	g/m3	59.1	33.6		07/13/14 17:08	179601-23-1	
o-Xylene	ND u	g/m3	29.6	33.6		07/13/14 17:08	95-47-6	
Sample: V-DSCHG-2	Lab ID: 10	272237002	Collected: 06/25/	14 09:05	Received: (	06/27/14 10:00 N	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analvzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: IO-15						
Benzene	<b>12.0</b> u	g/m3	10.9	33.6		07/13/14 17:29	71-43-2	A4
Ethylbenzene	ND u	g/m3	29.6	33.6		07/13/14 17:29	100-41-4	
THC as Gas	ND u	g/m3	2040	33.6		07/13/14 17:29		
Toluene	ND u	g/m3	25.9	33.6		07/13/14 17:29	108-88-3	
m&p-Xylene	ND u	g/m3	59.1	33.6		07/13/14 17:29	179601-23-1	
o-Xylene	ND u	g/m3	29.6	33.6		07/13/14 17:29	95-47-6	
Sample: V-DSCHG-3	Lab ID: 10	272237003	Collected: 06/25/	14 09:10	Received: (	06/27/14 10:00 M	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	g/m3	11.3	34.8		07/13/14 17:51	71-43-2	A4
Ethylbenzene	ND u	g/m3	30.6	34.8		07/13/14 17:51	100-41-4	
THC as Gas	ND u	g/m3	2120	34.8		07/13/14 17:51		
Toluene	ND u	g/m3	26.8	34.8		07/13/14 17:51	108-88-3	
m&p-Xylene	ND u	g/m3	61.2	34.8		07/13/14 17:51	179601-23-1	
o-Xylene	ND u	g/m3	30.6	34.8		07/13/14 17:51	95-47-6	
Sample: V-INT-1	Lab ID: 10	272237004	Collected: 06/25/	14 09:15	Received: (	06/27/14 10:00 N	1atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15					_	
Benzene	<b>19.3</b> u	g/m3	11.3	34.8		07/13/14 18:12	71-43-2	A4,IS
Ethylbenzene	148 u	g/m3	30.6	34.8		07/13/14 18:12	100-41-4	, -
THC as Gas	<b>9600</b> u	g/m3	2120	34.8		07/13/14 18:12	-	
Toluene	<b>231</b> u	g/m3	26.8	34.8		07/13/14 18:12	108-88-3	IS
m&p-Xylene	<b>773</b> u	g/m3	61.2	34.8		07/13/14 18:12	179601-23-1	
o-Xylene	<b>38.0</b> u	g/m3	30.6	34.8		07/13/14 18:12	95-47-6	

### **REPORT OF LABORATORY ANALYSIS**

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### Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10272237

Sample: V-INT-2	Lab ID: 10	272237005	Collected: 06/25/	14 09:20	Received: 0	06/27/14 10:00 N	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene Ethylbenzene	<b>19.4</b> u <b>34.0</b> u	g/m3 g/m3	11.3 30.6	34.8 34.8		07/13/14 18:34 07/13/14 18:34	71-43-2 100-41-4	A4
THC as Gas	<b>12900</b> u	g/m3	2120	34.8		07/13/14 18:34		
Toluene	<b>143</b> u	g/m3	26.8	34.8		07/13/14 18:34	108-88-3	
m&p-Xylene	ND u	g/m3	61.2	34.8		07/13/14 18:34	179601-23-1	
o-Xylene	ND u	g/m3	30.6	34.8		07/13/14 18:34	95-47-6	
Sample: V-INT-3	Lab ID: 10	272237006	Collected: 06/25/	14 09:25	Received: 0	06/27/14 10:00 N	latrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	<b>24.5</b> u	g/m3	11.3	34.8		07/13/14 18:55	71-43-2	IS
Ethylbenzene	<b>130</b> u	g/m3	30.6	34.8		07/13/14 18:55	100-41-4	
THC as Gas	<b>19100</b> u	g/m3	2120	34.8		07/13/14 18:55		
Toluene	<b>188</b> u	g/m3	26.8	34.8		07/13/14 18:55	108-88-3	IS
m&p-Xylene	<b>944</b> u	g/m3	61.2	34.8		07/13/14 18:55	179601-23-1	
o-Xylene	<b>207</b> u	g/m3	30.6	34.8		07/13/14 18:55	95-47-6	
Sample: V-INF-1	Lab ID: 10	272237007	Collected: 06/25/	14 09:30	Received: 0	06/27/14 10:00 N	Atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15						
Benzene	ND u	g/m3	76.0	233.86		07/13/14 19:38	71-43-2	A4
Ethylbenzene	<b>277</b> u	g/m3	206	233.86		07/13/14 19:38	100-41-4	
THC as Gas	<b>55200</b> u	g/m3	14200	233.86		07/13/14 19:38		
Toluene	<b>309</b> u	g/m3	180	233.86		07/13/14 19:38	108-88-3	
m&p-Xylene	<b>5840</b> u	g/m3	412	233.86		07/13/14 19:38	179601-23-1	
o-Xylene	<b>2280</b> u	g/m3	206	233.86		07/13/14 19:38	95-47-6	
Sample: V-INF-2	Lab ID: 10	272237008	Collected: 06/25/	14 09:35	Received: 0	06/27/14 10:00 N	Atrix: Air	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Me	thod: TO-15					-	-
Renzene	יי חא ND יי	a/m3	72 /	225 70		07/13/14 20.00	71-43-2	<b>Δ</b> 4
Ethylbenzene	יי סא אי סא	g/113 a/m3	100	225.79		07/13/14 20:00	100_41_4	~+
THC as Gas	ע שעו יי חחכיכי	g/113 a/m3	133	225.79		07/13/14 20:00	100-41-4	
	23200 u ND	g/113 a/m3	13700	225.79		07/13/14 20:00	108-88-3	
m&n-Xylene	ט שאי ייי <b>2820</b>	g/113 a/m3	207	225.79		07/13/14 20:00	179601-22-1	
o-Xvlene	1070 u	g/m3	100	225 79		07/13/14 20:00	95-47-6	
0 / 10/10	10/0 u	9/110	199	220.13		20.00	00 11 0	

### **REPORT OF LABORATORY ANALYSIS**

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### Project: AOC 1396-P66 Westlake/Mercer

### Pace Project No.: 10272237

Sample: V-INF-3	Lab ID: 10272237009	Collected: 06/25/	14 09:40	Received: 06	6/27/14 10:00 N	latrix: Air	
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-1	5					
Benzene	ND ug/m3	152	467.71		07/13/14 20:22	71-43-2	A4
Ethylbenzene	ND ug/m3	412	467.71		07/13/14 20:22	100-41-4	
THC as Gas	ND ug/m3	28400	467.71		07/13/14 20:22		
Toluene	ND ug/m3	360	467.71		07/13/14 20:22	108-88-3	
m&p-Xylene	<b>3140</b> ug/m3	823	467.71		07/13/14 20:22	179601-23-1	
o-Xylene	<b>1130</b> ug/m3	412	467.71		07/13/14 20:22	95-47-6	



### **QUALITY CONTROL DATA**

Project:	AOC 1	396-P66 Westlake/Mercer									
Pace Project No.:	102722	237									
QC Batch:	AIR/2	0764	Analysis Me	ethod:	ТО	)-15					
QC Batch Method:	TO-1	5	Analysis De	scription:	то	15 MSV AIF	R Low	Level			
Associated Lab Sar	nples:	10272237001, 10272237002, 10272237008, 10272237009	10272237003,	10272237004	4, 10	272237005,	, 1027	2237006,	1027	2237007,	
METHOD BLANK:	173150	)7	Matrix	: Air							-
Associated Lab Sar	nples:	10272237001, 10272237002, 10272237008, 10272237009	10272237003,	10272237004	4, 10	272237005	, 1027	2237006,	1027	2237007,	
			Blank	Reporting	9						
Paran	neter	Units	Result	Limit		Analyze	ed	Qualif	iers		
Benzene		ug/m3	ND	0	.32	07/13/14 1	6:46				
Ethylbenzene		ug/m3	ND	0	.88	07/13/14 1	6:46				
m&p-Xylene		ug/m3	ND		1.8	07/13/14 1	6:46				
o-Xylene		ug/m3	ND	0	.88	07/13/14 1	6:46				
THC as Gas		ug/m3	ND	6	8.0	07/13/14 1	6:46				
Toluene		ug/m3	ND	0	).77	07/13/14 1	6:46				
LABORATORY CO	NTROLS	SAMPLE: 1731508									_
			Spike	LCS		LCS	%	Rec			
Paran	neter	Units	Conc.	Result	%	6 Rec	Liı	nits	Q	ualifiers	
Benzene		ug/m3	32.5	29.3		90		69-134			
Ethylbenzene		ug/m3	44.2	53.5		121		73-139			
m&p-Xylene		ug/m3	44.2	50.1		114		73-139			
o-Xylene		ug/m3	44.2	52.6		119		71-138			
THC as Gas		ug/m3	3520	3490		99		65-136			
Toluene		ug/m3	38.3	42.0		110		67-133			
SAMPLE DUPLICA	TE: 17	31783									—
Paran	neter	Units	10272237006 Result	Dup Result		RPD		Max RPD		Qualifiers	
Benzene		ug/m3	24.5	2	3.5		4		25	IS	
Ethylbenzene		ug/m3	130		119		8		25		
m&p-Xylene		ug/m3	944	ę	903		4		25		
o-Xylene		ug/m3	207		192		8		25		
THC as Gas		ug/m3	19100	133	300		36		25	R1	
Toluene		ug/m3	188		175		7		25	IS	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

### **REPORT OF LABORATORY ANALYSIS**

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### QUALIFIERS

Project: AOC 1396-P66 Westlake/Mercer

Pace Project No.: 10272237

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

**DUP - Sample Duplicate** 

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

### SAMPLE QUALIFIERS

Sample: 10272237001

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Sample: 10272237002

[1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.

Sample: 10272237007

[1] This result is reported from a serial dilution.

Sample: 10272237008

[1] This result is reported from a serial dilution.

Sample: 10272237009

- [1] The internal standard recoveries associated with this sample exceed the lower control limit. The reported results should be considered estimated values.
- [2] This result is reported from a serial dilution.

### ANALYTE QUALIFIERS

- A4 Sample was transferred from a sampling bag into a Summa Canister within 48 hours of collection.
- IS The internal standard recovery associated with this result exceeds the lower control limit. The reported result should be considered an estimated value.
- R1 RPD value was outside control limits.



### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:AOC 1396-P66 Westlake/MercerPace Project No.:10272237

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10272237001	V-DSCHG-1	TO-15	AIR/20764		
10272237002	V-DSCHG-2	TO-15	AIR/20764		
10272237003	V-DSCHG-3	TO-15	AIR/20764		
10272237004	V-INT-1	TO-15	AIR/20764		
10272237005	V-INT-2	TO-15	AIR/20764		
10272237006	V-INT-3	TO-15	AIR/20764		
10272237007	V-INF-1	TO-15	AIR/20764		
10272237008	V-INF-2	TO-15	AIR/20764		
10272237009	V-INF-3	TO-15	AIR/20764		

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917 1st Avenue North, Suite 3 Billings, Montana 59101 Telephone: 406-259-1033 Fax: 406-259-1099

Appendix B Carbon Change Documentation



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movement:	lot#	type	mesh	weight	packaging	# used	by	N
	140409-1	VCI	774/0	72435				
		VCNS	1004 K	3000	55	3	73	I > DB
movement:	profile #	type	mesh	weight	- packaging	<u>#used</u>	location	-
	11×1 4006 4NH		7,6/0	145	().01	<u> </u>	260-	10 00 7008
				1190				5087 1270
			-	1215				$\succ$
				1209				
				196	· · · ·		<u> </u>	×.
							· · · · · · · · · · ·	
			, ,					1

## SR Time Tracking

Vehicl	e Name	Date	Mileage	Travel Time	Site Time	Sum Line
						.0
		······································				0
						0
			1			0
						0
		Sum Mileage	e   0	27 	Sum Time	0



Evogua Water Technologies LLC - Telephone: (928) 669-5758 2523 Mutahar Street - Box 3308 Parker, AZ 85344

Facsimile: (928) 669-5775

May 28, 2014

Ed Ralston Phillips 66 Company 76 Broadway Sacramento, CA 95818-

This is to certify the following spent carbon received at the Evoqua Water Technologies Carbon Reactivation facility was reactivated in accordance with 40 CFR Part 265 and Part 61 regulations:

Site Address:	Facility No. 255353 (AOC 1396) 600
Profile Number:	W140069NH
Shipping Document Number:	051514SL
Date Of Receipt:	May 19, 2014
Container Quantity - Type:	7 - Bag
Reactivation Date:	5/24/2014

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations, I verify the information contained above is true, accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification this information is true, accurate and complete.

**Evoqua Water Technologies LLC** 

EPA ID No. AZD 982 441 263

Sincerely,

1Der Oc

Monte McCue Plant Manager