

**UNDERGROUND STORAGE TANK SYSTEMS  
REMOVAL, ABOVEGROUND USED OIL STORAGE  
TANK REMOVAL AND ASSOCIATED  
REMEDIAL/CORRECTIVE ACTIONS REPORT**

**NOVEMBER 25, 2016**

**FORMER FLINTSTONE FUEL SITE  
2840-C BLACK LAKE BOULEVARD SW  
TUMWATER, WASHINGTON**

*Prepared By*

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Telephone 360-438-9521 Fax 360-412-1225

November 25, 2016

Mr. John Meek  
Meek Logging  
Olympia, Washington

Dear Mr. Meek:

RE: UNDERGROUND STORAGE TANK SYTEMS REMOVAL, ABOVEGROUND USED OIL STORAGE TANK REMOVAL AND ASSOCIATED REMEDIAL/CORRECTIVE ACTIONS REPORT FOR FORMER FLINSTONE FUEL SITE LOCATED AT 2840 - C BLACK LAKE BOULEVARD SW, TUMWATER, WASHINGTON.

## 1.0 SITE CHARACTERISTICS AND BACKGROUND

The UST site consists of approximately .90 acres (39,064 sq. ft.) of commercially developed property located at 2830 C Black Lake Boulevard, Tumwater, Washington and on Tax Parcel #12829130202,

The subject site, Tax Parcel #12829130202, is located on the western side of Black Lake Boulevard SW. The UST site is immediately surrounded by properties that have been used for commercial gravel mining purposes for many years.

The center of the subject site is located at Longitude 122.957, Latitude 47.024, and within section 29, township 18 north, range 2 west.

The subject site is located in an area primarily occupied by commercial/industrial/mining properties, and various commercial businesses/facilities.

A commercial card lock type vehicle fueling station occupies the majority of this property.

The site is listed by the Washington State Department of Ecology as UST Site ID #97733 and Facility Site ID #79995945. The status of the UST Site is listed as Temporarily Closed.

The known underground storage tanks (USTs), that serviced this site in previous years, and that were buried on the site, at the beginning of these on-site activities, three (3) approximately 10,000 gallon capacity underground diesel fuel storage tanks, one (1) approximately 10,000 gallon capacity unleaded gasoline underground storage tank, and two (2) approximately 8,000 gallon capacity lube oil (motor oil) underground storage tanks.

The USTs were buried along the southern perimeter of the vehicle fueling station site. Available information indicates the steel USTs were installed in June of 1987.

The vehicle fueling facility was serviced by three (3) pump islands that were located directly north of the USTs. The pump islands were surrounded by concrete driveways/slabs and were covered by a 42 ft. by 40 ft. metal canopy. The canopy was constructed in 1987.

All residual liquids were removed from the USTs and some of the tanks were cleaned at the time they were placed "out of service" in recent years. A Temporary Closure Notice was filed with Ecology.

During a pre-tank removal inspection, it was discovered that all of the USTs contained various residual quantities of water. It appears the fill cap was not properly secured on one (1) of the 8,000 gallon capacity tanks and the tank became substantially filled with storm water.

All residual quantities of water were pump/removed from the tanks and were then cleaned by Marine Vacuum Services and/or Cowlitz Clean Sweep.

Residual waters and tank rinsing liquids were properly transported off-site for treatment/recycling at facilities operated by Marine Vacuum Services (Seattle) and Petroleum Reclaiming Services (Tacoma).

Additionally, the subject property was serviced by an approximately 500 gallon aboveground used oil storage tank. The steel tank was located directly adjacent to the southern exterior wall of an outbuilding located approximately 250 feet southwest of the vehicle fueling facility and on a parcel of land that surrounded the parcel of land that the UST facility was located on. The tank's location had a gravel surface and had a sloped overhead metal canopy. Oil stains and discoloration were observed on the surfaces of the gravels directly surrounding the tank.

All residual liquids were removed from the AST and the tank was cleaned by Cowlitz Clean Sweep. All residual and tank cleaning liquids were properly transported to Petroleum Reclaiming Services for treatment/recycling.

## **2.0 PRELIMINARY ON-SITE ACTIVITIES**

### **2.1 Preliminary Soil Sampling**

On April 8, 2014, I supervised the excavation of a test pit near the southeast on-site UST burial pit. The excavation pit was created to sample the subsurface soils and to observe groundwater elevation levels.

The excavation pit was extended to an approximate depth of 12 feet b.g.s.

During the on-site excavation activities, I observed soils that possessed a noticeable diesel fuel type odor and that produced a strong sheen when exposed to a water sheen test.



I obtained two (2) discreet soil samples from the soils present in the northern sidewall of the excavation at depths of 6 ft. and 9 ft. b.g.s. The soil samples were properly packaged and then submitted for appropriate laboratory analyses.

Laboratory analyses results for characterization soil sample SP1, obtained from the soils present in the excavated pit sidewall at a depth of 6 feet b.g.s., reported the presence of diesel fuel range TPH, at levels that exceed MTCA Method A Clean Up Levels.

Laboratory analyses results for characterization soil sample SP2, obtained from the soils present in the excavated pit sidewall at a depth of 9 feet b.g.s., report the detectable presence of diesel fuel range TPH, at levels that do not exceed MTCA Method A Clean Up Levels.

The presence of diesel fuel in the subsurface soils surrounding lube oil underground storage tanks indicates the presence of petroleum contaminated soils and/or groundwater on this site may be extensive.

An approximately two (2) foot thick layer of drain rock was placed on the bottom of the excavation pit, then a 10 inch diameter by 10 ft long slotted PVC drain pipe was placed in the excavation and the excavation/test pit was backfilled using drain rock. Approximately 1 foot of the solid portion of the pipe is aboveground. The pipe will be used to determine groundwater elevations on a periodic basis. The groundwater elevation information will be used to determine the appropriate time to commence on-site excavation activities.

## **2.2 Overhead Canopy and Concrete Demolition**

All underground utilities were located by an Underground Utilities Locating Service using conventional utility locating equipment and/or Ground Pulse Radar (GPR).

All electrical supply lines were properly disconnected and capped.

All fuel dispensers were disconnected and removed from the concrete pump island.

The metal overhead pump island canopy was then properly demolished. All metal demolition debris was properly loaded and transported to Sutter Metals/Lacey Auto Wrecking for recycling as scrap metal.

The concrete pump islands and driveways were demolished. All concrete demolition debris was hauled next door to Concrete Recyclers for recycling.

All on-site demolition activities were performed under permit #TUM-14-0476 issued by the City of Tumwater.

## **2.3 Residual Water Removal, Supply Line Draining, and Tank Cleaning Activities**

All residual fuels/liquids contained in the fuel dispensers and underground fuel supply lines were drained back into the underground fuel storage tanks.

One of the on-site 8,000 gallon underground fuel storage tanks was substantially filled with water. The fill cap on the tank was left partially open and the flowing storm water in the area partially filled the tank.

All residual liquids were pumped from the tanks and the tanks were properly cleaned by Marine Vacuum Service. All residual and tank rinsing liquids were transported to Marine Vacuum Services Seattle Facility and to Petroleum Reclaiming Services in Tacoma, Washington.

## **2.4 Underground Fuel Supply Line Removal**

After the demolition and removal of the concrete surface materials, all underground fuel supply lines were disconnected from the underground fuel storage tanks and were removed from the ground and were placed in on-site demolition debris stockpiles. All piping connection holes were then temporarily plugged.

During the underground fuel supply line removal process in the area of the former pump island, a noticeable odor of petroleum products was present. Soils surrounding piping located on the north and northeastern portions of the pump island area possessed a very noticeable gasoline type odor.

Soils present in the uncovered UST burial pit area and the southern portion of the pump island area possessed a noticeable diesel fuel type odor.

All underground fuel supply line demolition metal debris was properly transported to Sutter Metals/Lacey Auto Wrecking for recycling as scrap metal.

## **3.0 UNDERGROUND FUEL STORAGE TANK REMOVALS AND ASSOCIATED REMEDIAL/CORRECTIVE ACTIONS**

In preparation for the UST removals, all concrete and/or asphalt surface materials present over the tanks were demolished, loaded and transported to the neighboring off-site recycling facility.

Prior to removal the tanks were properly purged of volatile vapors using dry ice (CO<sub>2</sub>) at a rate of 2lbs. per 100 gallons capacity. Ice was continually added to the tanks during the excavation and removal process.

Beginning on July 7, 2014, I supervised the excavation and removal of four (4) 10,000 gallon and two (2) 8,000 gallon gasoline underground fuel storage tanks (USTs). All excavation and UST removal activities were performed by representatives of Vessy and Sons, Inc.

Mr. Brett Manning, a U.S.T. Inspector with the Department of Ecology, was notified of the UST removals but was unable to visit the site during the on-site tank removal activities. Mr. Manning did attend an on-site pre-project meeting.

Initial excavation activities were focused on the removal of petroleum contaminated soils located in the southwest corner of the UST burial pit and near the southern ends of the two (2) 8,000 gallon lube oil underground storage tanks (USTs).



The excavated soils consisted of dark brown gravelly soils with some larger cobbles intermixed. Various sized pieces of timber were also found at various depths throughout the excavation.

Soils excavated along the southern (fill port) end of the two (2) USTs possessed a noticeable diesel fuel type odor and produced a strong sheen when exposed to a water sheen test (field screening). The presence of diesel fuel contaminated soils and/or groundwater in the soils directly surrounding a UST used to store lube oil indicates that the limits of the petroleum contaminated soils and/or groundwater plume on this site may be extensive.

The strong presence of diesel fuel range contamination in the soils appeared to lessen as the excavation of soils along the western sidewall of the excavation pit was advanced in a northerly direction. After the soils were removed from the southern ends and along the western sidewall excavation, the remaining overburden soils were removed from the top of the tanks and placed in the appropriate stockpiles.

During excavation activities, all excavated soils were field screened and placed on a 6 mil visqueen liner and covered with a 4 mil visqueen tarp for temporary storage. Soils that noticeably contained elevated levels of petroleum products were placed in separate stockpiles.

During the tank removal excavation project, selected portions of the excavation were dewatered on a regular/continual basis. During the early stages of the excavation project, water flowed into the excavation at a limited but constant rate.

Waters generated during these dewatering activities were placed in large portable aboveground storage tanks for temporary storage purposes. Cowlitz Clean Sweep (CCS) transferred the waters into transport trucks on a periodic basis. The waters were then transported to Petroleum Reclaiming Services in Tacoma, Washington for treatment and recycling.

After the soils immediately surrounding the western most UST were removed, the steel fuel tank was extracted from the excavation pit using an excavator. The UST was placed on a visqueen liner on a remote portion of the site. The tank was properly secured using wooden, non abrasive blocks.

After removal of the UST, a limited amount of soils was removed along the western base of the easterly adjacent UST. The adjacent UST was then extracted from the excavation, placed next to the other removed UST and properly secure. The process was duplicated during the removal of the four (4) additional USTs.

During a visual inspection of the six (6) steel tanks, I observed no presence of any significant corrosion and/or any holes on the tank's surfaces.

The excavation was advanced to an approximate depth of 13 ft b.g.s. (below ground surface) in the USTs burial pit area.

The southern sidewall of the UST excavation was advanced approximately 15 feet to the south to facilitate removal of all of the petroleum contaminated soils from the southern sidewall of the excavation.

The UST excavation was extended approximately 15 feet to the west to facilitate the removal of the petroleum contaminated soils from the western sidewall of the excavation.

The UST excavation area was extended approximately 30 feet to the east. During the excavation of petroleum contaminated soils in this area, a large, 2 day rain event took place. A pit was excavated in the southeast corner of the excavation to collect the water.

The collected oily waters were pumped into a large aboveground water storage tank that was placed near the eastern end of the excavation area.

Upon the completion of the rain event, and after the collected waters had been remove from the excavation, we resumed the excavation/removal of petroleum contaminated soils from the southeastern portion of the excavation until all noticeably contaminated soils were remove from the floor and sidewalls of this portion of the excavation.

During the excavation and removal of the petroleum contaminated soils in areas beneath the former pump island we noticed that soils removed from the southern, western, central, and northwestern portions of the pump island excavation area possessed a noticeable diesel fuel type odor, while soils removed from the northern and eastern portions of the pump island excavation area possessed a noticeable gasoline type odor.

The excavation was extended to the west and northwest approximately 10 feet beyond the original footprint of the pump island before field screening results indicated no remaining presence of petroleum products in the soils present in the floor and the sidewalls of this portion of the excavation. The petroleum contaminated soils were present at greater depths on the southern end of the pump island excavation area, near the UST burial pit, than on the northern portion of the excavation area.

During the excavation of petroleum contaminated soils from the northern and eastern portions of the excavation we encountered intermittent layers and small pockets of gravels at depths of 5 feet b.g.s. The soils directly below these gravels possessed a noticeable gasoline type odor.

The excavation was advanced to the north approximately 10 feet and to the east 40 feet beyond the operational footprint of the pump island.

The eastern migration of the gasoline range contaminants in the shallow subsurface materials was definitely aided by the presence of the permeable gravel layers. We found isolated layers of gasoline impacted gravels surrounded by clean materials.

After the removal of all the noticeably impacted soils from this area, laboratory analyses results for screening soil samples reported no presence of total petroleum hydrocarbons but the remaining presence of Benzene at levels exceeding MTCA Method A Clean Up Levels.

We continued to excavate and remove PCS from these areas until laboratory analyses results reported no presence of THP and/or BTEXs at levels that exceed MTCA Method a Clean Up Levels.

The expanded excavation covered approximately 9,500 square feet area.



A total of fifty-four (54) confirmation soils samples were obtained from the floor and sidewalls of the UST burial pit and pump island area remedial excavation.

Laboratory analyses results for the fifty-four (54) confirmation soil samples reported no presence of gasoline range TPH, diesel fuel range TPH, lube oil range TPH, and/or BTEXs, at levels that exceed MTCA Method A Clean Up Levels in the floors and sidewalls of the completed remedial excavation.

A total of 3,633.90 tons of petroleum contaminated soils were excavated from the Underground Storage Tank Excavation Area. The soils were loaded and transported to Cowlitz County Landfill for proper disposal.

The excavation was backfilled using clean gravels that were properly compacted for stability.

#### **4.0 USED OIL ABOVEGROUND STORAGE TANK REMOVAL AND ASSOCIATED REMEDIAL/CORRECTIVE ACTIONS**

A 500 gallon used oil aboveground storage tank (AST) was located approximately 250 feet south of the UST site. The steel tank was located directly adjacent to southern exterior wall of a remote metal storage/garage building. The building was constructed on a concrete slab. We discovered that the southern 6 feet portion of the building has a plywood floor.

The steel AST sat on a gravel surfaced area that was covered and protected from weather by a sturdy, oversized metal roof/canopy that was attached to the metal building. The canopy was supported by substantial steel frame. A private power pole was located approximately 12 feet south of the ASTs location.

The fill port for the AST was located on the western end of the tank.

The steel surfaces surrounding the tank's fill port appeared to have an oily appearance.

The gravels located beneath the western end of the used oil storage tank were discolored/oil stained.

It was determined the AST should be placed "out of service", removed from the site, and the soils surrounding the AST should be properly remediated.

All residual liquids were removed from the tank and the tank was properly cleaned.

The metal canopy was demolished/removed to provide reasonable access to remove the tank and the adversely impacted soils.

The steel tank was then removed and was transported off-site, along with the metal roof's demolition debris, to an appropriate off-site metal recycling facility.

We then proceeded to excavate a limited amount of shallow soils that were noticeably contaminated from AST's previous location. The shallow excavation was extended to an

approximate depth of 28 inches b.g.s. The northern sidewall of the excavation was directly adjacent to the southern edge of the metal building.

The excavated soils were placed on a visqueen liner and covered with a tarp for temporary storage.

Six (6) representative soils samples were obtained from the floor and sidewalls of the shallow excavation. The soil samples were submitted for appropriate laboratory analyses.

Laboratory analyses results for soils samples EF, WSW, NSW, and SSW reported the presence of lube oil range TPH in the western, southern and northern sidewalls of the excavation at depths of approximately 18 inches b.g.s., and in the eastern portion of the excavation floor at a depth of 28 inches b.g.s. at levels that exceed MTCA Method A Clean Up Levels.

Laboratory analyses results for soils samples WF, and ESW reported the no presence of lube oil range TPH, at levels that exceed MTCA Method A Clean Up Levels, in the western floor, and eastern sidewall of the excavation at comparable depths.

Laboratory analyses results for selected soil sample NSW reported no presence of MTCA 5 Metals and/or CPAHs at levels that exceed MTCA Method A Clean Up Levels.

The above listed laboratory analyses results were also submitted to the off-site disposal facility as waste soils characterization samples.

The presence of elevated levels of lube oil range TPH in the soils present in the northern sidewall of the excavation indicates that the lube oil contaminated soils plume extends beneath the metal building, the wooden floor beneath the southern portion of the metal building and potentially beneath the building's concrete slab floor.

We proceeded to excavate and remove additional petroleum contaminated soils from soils from the western, southern and northern sidewalls as well as the eastern portion of the excavation floor.

In an effort to remove all of the petroleum contaminated soils from the extended northern sidewall of the excavation, we removed portions of the metal building's wooden floor. We then continued to excavate petroleum contaminated soils. The excavation was extended approximately 7.5 to the north and beneath building's footprint. The excavation was extended to depths of approximately 3.5 feet b.g.s. at selected locations.

Field screening results indicated that the petroleum contaminated soils plume extended beneath the buildings concrete on the western portion of the excavation.

We proceeded to advance five (5) investigative boreholes using a Direct Push System. Field screening of the soils obtained from the boreholes assisted us with determining the amount of concrete floor that needed to be remove to provide reasonable access for the excavation and removal of the remaining petroleum contaminated soils.

The concrete slab was saw cut and the concrete was removed to provide reasonable access to the remaining small pocket of petroleum contaminated soils.



The excavation was then extended using hand excavation tools (pick/shovels). The extended excavation area was approximately 36 inches deep was extended approximately 3 feet to the north and was approximately 5 feet in length.

A total of fifteen (15) additional soil samples were obtained from selected locations on the floor and sidewalls of the completed excavation.

Laboratory analyses results for confirmation soils samples S1, S2, S3, S4, S5, S6, S7, S9, S10, S11, S12, S13, S15, and S16 reported no presence of diesel fuel and/or lube oil range TPH at levels that exceed MTCA Method A Clean Up Levels in the floor and sidewalls of eastern and western portions of the northern sidewall, western sidewall, southern sidewall, and the exterior excavation floor.

Laboratory analyses results for selected confirmation soils samples S4, S5, S11, S13, and S15 reported no presence of MTCA 5 Metals at levels that exceed MTCA Method A Clean Up Levels.

Laboratory analyses results for excavation soil sample S14 reported the presence of lube oil range TPH at levels equal to the MTCA Method A Clean Up Level in the northern sidewall of the extended excavation.

An additional 8 inches of soil was removed from the northern sidewall of the extended excavation area.

Soil sample S14-2 was obtained from the central portion of the northern sidewall of the extended excavation.

Laboratory analyses results for soil sample S14-2 reported no presence of lube oil range TPH at levels that exceed MTCA Method A Clean Up Levels.

The laboratory analyses results for the confirmation soil samples obtained from the Used Oil Aboveground Remedial Excavation Area confirm the successful removal of all known soils, that contain lube oil range TPH, at levels that exceed MTCA Method A Clean Up Levels, from the floor and sidewalls of the completed excavation.

No groundwater was encountered during these remedial excavation activities.

A total of 97.89 tons of petroleum contaminated soils were excavated from the Used Oil, Aboveground Storage Tank Excavation Area. The soils were loaded and transported to Cowlitz County Landfill for proper disposal.

The excavation was backfilled using clean gravels that were properly compacted for stability.

## **5.0 SOIL SAMPLING, WATER SAMPLING, AND LABORATORY ANALYSES PROTOCOLS**

Excavation soil samples were taken with hand sampling tools properly cleaned between individual samples to prevent cross sample contamination.

Borehole soils samples were obtained using a combination of the Direct Push Sampling System and an Easy Draw Sampler.

EPA Method 5035 sampling protocols were practiced when sampling soils to be analyzed for Volatile Organic Compounds.

Excavation and aboveground storage tank water samples were obtained using a disposable PVC bailer.

All samples were then tightly packed in recommended sample containers with no head space, properly refrigerated, and transported with proper chain of custody forms to ESN Northwest, Inc., of Olympia, Washington for laboratory analyses. Soil and/or water samples were screened for gasoline range Total Petroleum Hydrocarbons using method NWTPH-Gx, diesel fuel, and lube oil range T.P.H. using method NWTPH-Dx/Dx Extended, and VOCs using EPA method 8260, MTCA 5 Metals using EPA method 6020 series, and Semi-Volatile Organic Compounds (PAHs) using EPA method 8270.

## **6.0 HEALTH AND SAFETY**

1. All on-site work was performed under the Health and Safety guidelines set forth in sections 29 CRF 1910.120 of the Federal Register and Chapter 296-62 WAC which provide regulations for individuals who are engaged in activities involving hazardous substances, including petroleum, and who perform confined space entry during field activities, also Chapter 296-155 WAC which provides State safety standards for construction work.

2. All on-site workers were 40 hour Hazmat certified.

3. A copy of the Site Safety Plan was provided to all on-site employees. The contents of this plan and all potential on-site hazards were discussed during an on-site safety meeting. Based on the contents of this safety plan all workers were required to wear at least Level D protection. First Aid materials were on-site at all times.

4. All recoverable quantities of combustible/flammable liquids were pumped/removed from these tanks and the tanks were cleaned prior to the commencement of any on-site UST removal excavation activities.

5. The extended perimeter of the work area was secured at all times by caution tape, orange hazard candlesticks and a chain link security fence.

## **7.0 SUMMARY**

1. A confirmed release of gasoline and diesel fuel to subsurface soils surrounding the on-site underground fuel storage tanks was properly reported to Ecology.

A confirmed release of Used Motor Oil was properly reported to Ecology.

2. Three (3) approximately 10,000 gallon capacity underground diesel fuel storage tanks, one (1) approximately 10,000 gallon capacity unleaded gasoline underground storage tank, and



two (2) approximately 8,000 gallon capacity lube oil (motor oil) underground storage tanks were properly excavated and removed from the site as per applicable regulations.

3. A total of 3,633.90 tons of petroleum contaminated soils were excavated from the Underground Storage Tank/Pump Island Excavation Area. The petroleum contaminated soils were properly loaded into dump trucks and transported to Cowlitz County Landfill for proper disposal.

The petroleum contaminated soils in this area were the primarily the result of spills and overfills of gasoline and diesel fuel that took place during filling of the underground storage tanks, and leaking underground fuel supply lines. Leaking fuel dispensers could also have been a contributor.

4. Laboratory analyses results for fifty-four (54) confirmation soil samples obtained from the floor and sidewalls of the completed Underground Storage Tank/Pump Island Excavation Area reported no presence of gasoline range T.P.H., diesel fuel range TPH, lube oil range TPH, and/or B.T.E.X.'s at levels that exceed Ecology's Method "A" Clean Up Levels.

5. A total of 25,129 gallons of petroleum contaminated waters were properly loaded and transported to Petroleum Reclaiming Services (PRS) or Marine Vacuum Services for proper recycling. The liquids were generated during on-site tank cleaning/rinsing activities and excavation dewatering activities.

6. Based on the confirmation soil samples laboratory analyses results, the excavation was backfilled using clean gravels that were properly compacted for stability.

7. One (1) approximately 500 gallon Used Oil Aboveground Storage tank was properly cleaned and removed from the site.

Discolored/oil stained soils were observed in area directly surrounding the ASTs fill port.

8. A total of 97.89 tons of petroleum contaminated soils were excavated from the Used Oil, Aboveground Storage Tank Excavation Area. The soils were loaded and transported to Cowlitz County Landfill for proper disposal.

The petroleum contaminated soils in this area were the result of spills and overfills of used oils that took place during the transfer of oils from portable oil storage containers into the tank via the fill port.

9. Laboratory analyses results for excavation soil samples obtained at the completion of this Used Oil Aboveground Storage Tank Removal and associated remedial and corrective actions reported no presence of diesel fuel range TPH, lube oil range TPH, and/or MTCA 5 Metals at levels that exceed Ecology's Method "A" Clean Up Levels in the remaining soils present in the floor and sidewalls of the expanded excavation pit.

10. All tank removal activities were performed under permit #TUM-14-0475 issued by the City of Tumwater. A 30-day notice was properly filed with Ecology.

11. The metal canopy demolition debris, steel tanks, and steel underground fuel supply lines were properly cleaned and then transported to the Sutter's Metals/Lacey Auto Wrecking for proper disposal/recycling as scrap metal.

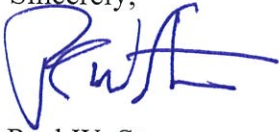
An inspection of the steel tanks revealed no holes and/or any significant level of corrosion.

12. The tank removal project was inspected and approved by a representative of the City of Tumwater.

**All opinions, observations, and recommendations set forth in this report are based on current available information and on-site conditions, and cannot predict or report on the impacts of future events and/or regulatory requirements on this site.**

If you have any questions or need further information please feel free to contact us at the above phone number.

Sincerely,



Paul W. Stemen  
Ecology-Registered Site Assessor  
IFCI #0874201-U2  
ASTM Certified



# **APPENDIX A**

## **MAPS AND CHARTS**

# **APPENDIX A - 1**

## **SITE LOCATIONS MAP**

## **APPENDIX A - 2**

# **UST SITE LABORATORY ANALYSES CHARTS AND CONFIRMATION SOIL SAMPLING LOCATION MAP**

# UST AREA PREPROJECT SOIL SAMPLES

ANALYSIS OF DIESEL AND LUBE OIL RANGE ORGANICS IN SOILS BY METHOD						
NWTPH-Dx/Dx EXTENDED						
SAMPLE	SAMPLE	SAMPLE	DIESEL	LUBE OIL		
NUMBER	DATE	DEPTH	RANGE	RANGE		
			ORGANICS	ORGANICS		
			mg/kg	mg/kg		
SP1	4/8/14	VARIOUS	7,300	ND		
SP2	4/8/14	VARIOUS	510	ND		
METHOD DETECTION LIMITS			50	100		
METHOD "A" CLEAN UP LEVELS			2000	2000		



# UST EXCAVATION AREA WATER STORAGE TANK SAMPLES

ANALYSIS OF DIESEL RANGE ORGANICS, LUBE OIL RANGE ORGANICS, GASOLINE RANGE ORGANICS & BTX IN WATER BY METHOD NWTPH Dx/Dx EXTENDED AND METHOD NWTPH-Gx/8260											
SAMPLE NUMBER	SAMPLE DATE	DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS		
W1	10/9/14	10.5	10	1.2	ND	4	1300	ND	ND		
W2	10/9/14	10.5	ND	ND	ND	ND	250	ND	ND		
REPORTING LIMITS			1	1	1	3	100	250	500		
METHOD "A" CLEAN UP LEVELS			5	1000	700	1000	1000	2000	2000		

UST EXCAVATION AREA SCREENING SAMPLES

ANALYSIS OF GASOLINE RANGE ORGANICS & BTEX IN SOIL BY METHOD NWT PH-GX/8260									
ANALYSIS OF DIESEL RANGE ORGANICS & LUBE OIL RANGE ORGANICS IN SOIL BY METHOD NWT PH-Dx/D EXTENDED									
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PI4	8/7/14	71"	0.23	ND	0.13	0.45	ND	ND	ND
PI6	8/7/14	60"	0.03	ND	ND	ND	ND	ND	ND
NEF1	8/12/14	120"	0.09	ND	ND	0.4	ND	ND	ND
NE2S	8/12/14	48"	0.68	0.19	0.33	3	49	ND	ND
SEC	8/12/14	126"	0.03	ND	ND	ND	ND	ND	ND
NEF2	8/12/14	121"	0.13	0.47	3.6	2.1	14	ND	ND
NE1	8/12/14	68"	0.04	ND	0.07	0.64	28	ND	260
PI7	8/12/14	60"	0.29	1.8	0.27	1.8	35	ND	ND
PI18	8/15/14	84"	0.06	ND	ND	0.18	ND	ND	ND
TF3	8/15/14	130"	0.08	ND	ND	0.5	ND	ND	ND
PINW	8/27/14	48"	0.05	ND	ND	ND	ND	ND	ND
PI34	8/28/14	80"	0.03	ND	0.16	ND	ND	ND	ND
PI36	8/28/14	84"	0.04	ND	ND	0.25	ND	ND	ND
METHOD DETECTION LIMIT			0.02	0.05	0.05	0.05	10	50	100
METHOD "A" CLEAN UP LE			0.03	7	6	9	30	2000	2000

UST EXCAVATION AREA CONFIRMATION SOIL SAMPLES

ANALYSIS OF GASOLINE RANGE ORGANICS & BTEX IN SOIL BY METHOD NWTPH-GX/8260									
ANALYSIS OF DIESEL RANGE ORGANICS & LUBE OIL RANGE ORGANICS IN SOIL BY METHOD NWTPH-Dx/D EXTENDED									
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1F	7/31/14	143"	ND	ND	ND	ND	ND	ND	ND
2F	7/31/14	145"	ND	ND	ND	ND	ND	ND	ND
4S	7/31/14	136"	ND	ND	ND	ND	ND	ND	ND
3S	7/31/14	130"	ND	ND	ND	ND	ND	ND	ND
23E	7/31/14	52"	ND	ND	ND	ND	ND	ND	ND
PI1	8/7/14	48"	ND	ND	ND	ND	ND	ND	ND
PI2	8/7/14	60"	ND	ND	ND	ND	ND	ND	ND
PI3	8/7/14	86"	ND	ND	ND	ND	ND	ND	ND
PI7	8/7/14	66"	ND	ND	ND	ND	ND	ND	ND
PI8	8/7/14	86"	ND	ND	ND	ND	ND	ND	ND
PI9	8/7/14	136"	ND	ND	ND	ND	ND	ND	ND
PI10	8/7/14	96"	ND	ND	ND	ND	ND	ND	ND
PI4-2	8/12/14	82"	ND	ND	ND	ND	ND	ND	ND
PI13	8/14/14	84"	ND	ND	ND	ND	ND	ND	ND
PI14	8/14/14	56"	ND	ND	ND	ND	ND	ND	ND
PI15	8/14/14	94"	ND	ND	ND	ND	ND	ND	ND
PI16	8/14/14	112"	ND	ND	ND	ND	ND	ND	ND
TF1	8/14/14	148"	ND	ND	ND	ND	ND	ND	ND
T14	8/15/14	129"	ND	ND	ND	ND	ND	62	ND
T15	8/15/14	146"	ND	ND	ND	ND	ND	ND	ND
T13	8/15/14	108"	ND	ND	ND	ND	ND	ND	ND
PI19	8/15/14	130"	ND	ND	ND	ND	ND	ND	ND
T18	8/15/14	96"	ND	ND	ND	ND	ND	ND	ND
TF4	8/15/14	144"	ND	ND	ND	ND	ND	ND	ND



UST EXCAVATION AREA CONFIRMATION SOIL SAMPLES

ANALYSIS OF GASOLINE RANGE ORGANICS & BTEX IN SOIL BY METHOD NWTPH-GX/8260									
ANALYSIS OF DIESEL RANGE ORGANICS & LUBE OIL RANGE ORGANICS IN SOIL BY METHOD NWTPH-Dx/D EXTENDED									
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GASOLINE RANGE ORGANICS	DIESEL RANGE ORGANICS	LUBE OIL RANGE ORGANICS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
T19	8/15/14	106"	ND	ND	ND	ND	ND	ND	ND
T192	8/15/14	140"	ND	ND	ND	ND	ND	ND	ND
T5	8/15/14	145"	ND	ND	ND	ND	ND	ND	ND
T21	8/15/14	144"	ND	ND	ND	ND	ND	ND	ND
TF9	8/15/14	146"	ND	ND	ND	ND	ND	ND	ND
TF7	8/15/14	145"	ND	ND	ND	ND	ND	ND	ND
TF8	8/15/14	150"	ND	ND	ND	ND	ND	ND	ND
TF6	8/15/14	147"	ND	ND	ND	ND	ND	ND	ND
T22	8/15/14	144"	ND	ND	ND	ND	ND	ND	ND
T20	8/15/14	82"	ND	ND	ND	ND	ND	ND	ND
T23	8/15/14	84"	ND	ND	ND	ND	ND	ND	ND
TF10	8/15/14	141"	ND	ND	ND	ND	ND	ND	ND
TF12	8/15/14	145"	ND	ND	ND	ND	ND	ND	ND
S30	8/15/14	96"	ND	ND	ND	ND	ND	ND	ND
S31	8/15/14	60"	ND	ND	ND	ND	ND	ND	ND
S32	8/15/14	108"	ND	ND	ND	ND	ND	ND	ND
PI25	8/27/14	106"	ND	ND	ND	ND	ND	ND	ND
PI22	8/27/14	108"	ND	ND	ND	<b>0.18</b>	ND	ND	ND
PI32	8/27/14	76"	ND	ND	ND	ND	ND	ND	ND
PI23	8/27/14	52"	ND	ND	ND	<b>0.21</b>	ND	ND	ND
PINE	8/27/14	68"	ND	ND	ND	ND	ND	ND	ND
NEC3	8/27/14	86"	ND	ND	ND	ND	ND	ND	ND
NF1-2	8/27/14	136"	ND	ND	ND	ND	ND	ND	ND
NF2-2	8/27/14	132"	ND	ND	ND	<b>0.18</b>	ND	ND	ND

# UST EXCAVATION AREA CONFIRMATION SOIL SAMPLES

[illegible]



STOCK PILE SAMPLES

ANALYSIS OF GASOLINE RANGE ORGANICS & BTEX IN SOIL BY METHOD NWTPH-GX/8260									
ANALYSIS OF DIESEL RANGE ORGANICS & LUBE OIL RANGE ORGANICS IN SOIL BY METHOD NWTPH-Dx/D EXTENDED									
SAMPLE	SAMPLE	SAMPLE				ETHYL-	TOTAL	GASOLINE	DIESEL
NUMBER	DATE	DEPTH	BENZENE	TOLUENE	BENZENE	BENZENE	XYLENES	ORGANICS	ORGANICS
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
CS1	7/31/14	VARIOUS	ND	ND	ND	ND	ND	1500	ND
CS2	7/31/14	VARIOUS	ND	ND	ND	ND	ND	1500	ND
CS3	7/31/14	VARIOUS	ND	ND	ND	ND	ND	3200	ND
CS4	7/31/14	VARIOUS	ND	ND	ND	ND	ND	1000	ND
CS5	7/31/14	VARIOUS	ND	ND	ND	ND	ND	2300	ND
SP6	8/8/14	VARIOUS	0.04	ND	0.08	ND	ND	8800	ND
SP7	8/8/14	VARIOUS	0.04	0.05	0.1	0.16	ND	8700	ND
SP8	8/8/14	VARIOUS	0.2	ND	0.85	0.49	ND	10000	ND
SP9	8/15/14	VARIOUS	0.03	ND	ND	ND	0.05	1500	ND
SP10	8/15/14	VARIOUS	0.06	ND	0.06	0.28	ND	900	ND
SP11	8/15/14	VARIOUS	0.02	ND	ND	0.19	ND	700	ND
SP11	8/15/14	VARIOUS	ND	ND	ND	ND	ND	ND	ND
SP12	8/15/14	VARIOUS	ND	ND	ND	0.15	ND	ND	ND
SP13	8/15/14	VARIOUS	ND	ND	ND	ND	ND	ND	ND
METHOD DETECTION LIMITS			0.02	0.05	0.05	0.05	10	50	100
METHOD "A" CLEAN UP LEVELS			0.03	7	6	9	30	2000	2000



## **APPENDIX A - 3**

# **AST SITE LABORATORY ANALYSES CHARTS AND CONFIRMATION SOIL SAMPLING LOCATION MAP**

AST EXCAVATION AREA CONFIRMATION SOIL SAMPLES

ANALYSIS OF DIESEL RANGE ORGANICS & LUBE OIL RANGE ORGANICS IN SOIL BY METHOD NWTPH-Dx/D EXTENDED					
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	DIESEL RANGE	LUBE OIL RANGE	
			ORGANICS	ORGANICS	
			mg/kg	mg/kg	
WF	6/20/15	34"	ND	780	
ESW	6/20/15	19"	ND	560	
S1	7/8/15	23"	ND	ND	
S2	7/8/15	27"	ND	ND	
S3	7/8/15	28"	ND	ND	
S4	7/8/15	38"	ND	ND	
S5	7/8/15	36"	ND	ND	
S6	7/8/15	27"	ND	ND	
S7	7/8/15	40"	ND	ND	
S9	7/13/15	22"	ND	220	
S10	7/13/15	36"	69	240	
S11	7/13/15	38"	ND	ND	
S12	7/14/15	28"	ND	ND	
S13	7/14/15	37"	ND	1500	
S15	7/14/15	24"	ND	1500	
S16	7/14/15	36"	ND	380	
S14-2	7/15/15	22"	ND	210	
METHOD DETECTION LIMITS			50	100	
METHOD "A" CLEAN UP LEVELS			2000	2000	

AST EXCAVATION AREA CONFIRMATION SAMPLES

TOTAL METALS IN SOIL BY EPA-6020 SERIES									
SAMPLE NUMBER	SAMPLE DATE	SAMPLE DEPTH	LEAD (Pb) mg/kg	CADMIUM (Cd) mg/kg	CHROMIUM (Cr) mg/kg	ARSENIC (As) mg/kg	Mercury (Hg) mg/kg		
S4	7/8/15	38"	ND	ND	57	ND	ND		
S5	7/8/15	36"	7.9	ND	24	ND	ND		
S11	7/13/15	41"	ND	ND	34	ND	ND		
S13	7/14/15	37"	ND	ND	29	ND	ND		
S15	7/14/15	24"	7.6	ND	35	ND	ND		
METHOD DETECTION LEVEL									
			5	1	5	5	0.5		
METHOD "A" CLEAN UP LEVELS									
			250	2	2000	20	2		



## AST EXCAVATION AREA SCREENING SAMPLE

ANALYSIS OF POLYNUCLEAR AROMATIC HYDROCARBONS IN SOIL BY METHOD 8270					
SAMPLE-NUMBER		NSW			
DATE		6/20/2015			
DEPTHS	REPORT LIMITS	18"			
		mg/kg			
Naphthalene	0.02	ND			
2-Methylnapthalene	0.02	ND			
1-Methylnapthalene	0.02	ND			
Acenaphthylene	0.02	ND			
Acenaphthene	0.02	0.57			
Fluorene	0.02	ND			
Phenanthrene	0.02	ND			
Anthracene	0.02	ND			
Fluoranthene	0.02	ND			
Pyrene	0.02	0.73			
Benzo(a)anthracene	0.02	ND			
Chrysene	0.02	ND			
Benzo(b)fluoranthene	0.02	ND			
Benzo(k)fluoranthene	0.02	ND			
Benzo(a)pyrene	0.02	ND			
Indeno(1,2,3-cd)pyrene	0.02	ND			
Dibenzo(a,h)anthracene	0.02	ND			
Benzo(ghi)perylene	0.02	ND			

# **APPENDIX B**

## **SITE PHOTOS**

# **APPENDIX C**

## **LABORATORY ANALYSES**



April 28, 2014

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tumwater, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended on April 10, 2014.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
FLINTSTONE FUEL PROJECT  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	4/10/2014	4/10/2014	94	nd	nd
LCS	4/10/2014	4/10/2014	107	99%	---
SP1	4/10/2014	4/10/2014	int	7,300	nd
SP2	4/10/2014	4/10/2014	88	510	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# CHAIN-OF-CUSTODY RECORD

CLIENT: STEWART ENVIRONMENTAL INC DATE: 4/8 PAGE 1 OF 1

ADDRESS: PO Box 3644 Bellingham, WA PROJECT NAME: FLUORIDE FUEL

PHONE: 360 438 9521 LOCATION: TUMWATER, WA

CLIENT PROJECT #: FLUORIDE FUEL COLLECTOR: PAUL STOKES DATE OF COLLECTION: 4/8

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number
					VOA 8021B	VOA 8021B BTEX ONLY	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	PAH 8100	PAH 8270	PCBS 8082	EPH	VPH			
1. <u>SP1</u>			<u>Soil</u>	<u>Inc</u>													
2. <u>SP2</u>			<u>"</u>	<u>"</u>													
3.																	
4.																	
5.																	
6.																	
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9.																	
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16.																	
17.																	
18.																	

RELINQUISHED BY (Signature) [Signature] DATE/TIME 4-8-14 1:30

RECEIVED BY (Signature) [Signature] DATE/TIME 4-8-14 1:30

RELINQUISHED BY (Signature) [Signature] DATE/TIME 4-8-14 1:30

RECEIVED BY (Signature) [Signature] DATE/TIME 4-8-14 1:30

**SAMPLE DISPOSAL INSTRUCTIONS**

☐ ESN DISPOSAL @ \$2.00 each ☐ Return ☐ Pickup

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/A

SEALS INTACT? Y/N/A

RECEIVED GOOD COND./COLD

NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY



September 11, 2014

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tuwater, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on August 1 - September 5, 2014.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,

*Michael A. Korosec*

Michael A. Korosec  
President

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NW/TPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	104
LCS	7/31/2014	8/1/2014	100%	97%	97%	101%	66%	100
LCSD	7/31/2014	8/1/2014	98%	100%	99%	106%	---	99
1F	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	106
2F	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	100
4S	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	101
3S	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	99
23E	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	108
CS1	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	102
CS2	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	113
CS3	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	100
CS4	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	110
CS5	7/31/2014	8/1/2014	nd	nd	nd	nd	nd	101
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
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Tumwater, Washington

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1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/1/2014	8/1/2014	102	nd	nd
LCS	8/1/2014	8/1/2014	111	91%	---
1F	8/1/2014	8/1/2014	109	nd	nd
2F	8/1/2014	8/1/2014	105	nd	nd
4S	8/1/2014	8/1/2014	109	nd	nd
3S	8/1/2014	8/1/2014	114	nd	nd
23E	8/1/2014	8/1/2014	127	nd	nd
23E Duplicate	8/1/2014	8/1/2014	112	nd	nd
CS1	8/1/2014	8/1/2014	124	1500	nd
CS2	8/1/2014	8/1/2014	Int	1500	nd
CS3	8/1/2014	8/1/2014	Int	3200	nd
CS4	8/1/2014	8/1/2014	121	1000	nd
CS5	8/1/2014	8/1/2014	Int	2300	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** STEWART ENVIRONMENTAL INC. **DATE:** 7/3/2014 **PAGE** 1 **OF** 1  
**ADDRESS:** 20800 364th Hwy, WA **PROJECT NAME:** FLUORSTORP FILL  
**PHONE:** 360 438 7524 **FAX:**  **LOCATION:** Tranworth, WA  
**CLIENT PROJECT #:** FLUORSTORP **PROJECT MANAGER:** Paul Stead **COLLECTOR:** Paul Stead **DATE OF COLLECTION:** 7/3/14

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES													NOTES	Total Number of Containers	Note Number	
					TPH - HClD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite				WO Suite
1. 1F	143		Soil	Tap	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
2. 2F	143				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
3. 4S	136				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
4. 3S	130				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
5. 23E	52				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
6. CS1	UM				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
7. CS2					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
8. CS3					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
9. CS4					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
10. CS5					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
11.					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
12.																					
13.																					
14.																					
15.																					
16.																					
17.																					
18.																					

**RELINQUISHED BY (Signature)** [Signature] **DATE/TIME** 7/3/2014 7:31:14  
**RECEIVED BY (Signature)** [Signature] **DATE/TIME** 7/3/2014 1635  
**RECEIVED BY (Signature)** [Signature] **DATE/TIME**   
**RECEIVED BY (Signature)** [Signature] **DATE/TIME**

**LABORATORY NOTES:**  
 TOTAL NUMBER OF CONTAINERS  
 CHAIN OF CUSTODY SEALS Y/N/NA  
 SEALS INTACT? Y/N/NA  
 RECEIVED GOOD COND./COLD  
 NOTES:

Turn Around Time: 24 HR / 48 HR / 5 DAY  
 Website: [www.esnnw.com](http://www.esnnw.com)  
 E-Mail: [info@esnnw.com](mailto:info@esnnw.com)



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnwnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/8/2014	8/8/2014	84	nd	nd
LCS	8/8/2014	8/8/2014	63	93%	---
PI1	8/8/2014	8/8/2014	87	nd	nd
PI2	8/8/2014	8/8/2014	86	nd	nd
PI3	8/8/2014	8/8/2014	87	nd	nd
PI6	8/8/2014	8/8/2014	88	nd	nd
PI4	8/8/2014	8/8/2014	87	nd	nd
PI7	8/8/2014	8/8/2014	86	nd	nd
PI7 Duplicate	8/8/2014	8/8/2014	83	nd	nd
PI8	8/8/2014	8/8/2014	96	nd	nd
PI9	8/8/2014	8/8/2014	92	nd	nd
PI10	8/8/2014	8/8/2014	84	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NW/TPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	110
LCS	8/7/2014	8/8/2014	94%	96%	88%	90%	112%	99
LCSD	8/7/2014	8/8/2014	98%	98%	91%	93%	---	92
PI1	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	114
PI1 Duplicate	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	109
PI2	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	108
PI3	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	113
PI6	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	109
PI4	8/7/2014	8/8/2014	0.23	nd	0.13	0.45	nd	112
PI7	8/7/2014	8/8/2014	0.03	nd	nd	nd	nd	107
PI8	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	112
PI9	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	109
PI10	8/7/2014	8/8/2014	nd	nd	nd	nd	nd	109
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



CLIENT: Shirley Environmental Inc. DATE: 8/7/2014 PAGE 1 OF 1

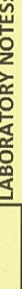

ADDRESS: PO PROJECT NAME: Fluoroc Fluor

PHONE: 360 489 524 FAX: 9.5 LOCATION: Tenacore, Wt.

CLIENT PROJECT #: Fluoroc Fluor COLLECTOR: Shirley DATE OF COLLECTION: 8/7

PROJECT MANAGER: Shirley

[illegible]

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT	LABORATORY NOTES:
	8/7/14		8-7-14 15:30	TOTAL NUMBER OF CONTAINERS	
				CHAIN OF CUSTODY SEALS Y/N/NA	
				SEALS INTACT? Y/N/NA	
				RECEIVED GOOD COND./COLD	
				NOTES:	

Turn Around Time: 24 HR 48 HR 5 DAY

1210 Eastside Street SE, Suite 200  
Olympia, Washington 98501

Phone: 360-459-4670  
Fax: 360-459-3432

Website: [www.esnnw.com](http://www.esnnw.com)  
E-Mail: [info@esnnw.com](mailto:info@esnnw.com)



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnwnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/11/2014	8/11/2014	100	nd	nd
LCS	8/11/2014	8/11/2014	108	80%	---
SP6	8/11/2014	8/11/2014	INT	8,800	nd
SP7	8/11/2014	8/11/2014	INT	8,700	nd
SP8	8/11/2014	8/11/2014	INT	10,000	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NW/TPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/8/2014	8/11/2014	nd	nd	nd	nd	nd	102
LCS	8/8/2014	8/11/2014	101%	104%	101%	104%	109%	100
LCSD	8/8/2014	8/11/2014	107%	100%	103%	111%	---	101
SP6	8/8/2014	8/11/2014	0.04	nd	0.08	nd	nd	105
SP7	8/8/2014	8/11/2014	0.04	0.05	0.10	0.16	nd	110
SP8	8/8/2014	8/11/2014	0.20	nd	0.85	0.49	nd	109
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

<b>CLIENT:</b> STEVEN ENVIRONMENTAL INC <b>ADDRESS:</b> PO Box 3644 Bellingham, WA <b>PHONE:</b> 360 4885524 <b>FAX:</b> <b>CLIENT PROJECT #:</b> 1400000 <b>PROJECT MANAGER:</b> Paul L. Stevens				<b>DATE:</b> 8/8/2014 <b>PAGE:</b> 1 <b>OF:</b> 1 <b>PROJECT NAME:</b> FLYTSTORE Fuel Site <b>LOCATION:</b> Tumwater, WA <b>COLLECTOR:</b> Paul Stevens <b>DATE OF COLLECTION:</b> 8/8																						
Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES										Total Number of Containers	Note Number
					TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	DRO Suite	WFO Suite									
1. SP6			Soil	250	22	22	22																			
2. SP7			1		22	22	22																			
3. SP8																										
4.																										
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RELINQUISHED BY (Signature)					DATE/TIME					RECEIVED BY (Signature)					DATE/TIME					LABORATORY NOTES:						
[Signature]					8/8/2014					[Signature]					8-8-14 1250					TOTAL NUMBER OF CONTAINERS						
RELINQUISHED BY (Signature)					DATE/TIME					RECEIVED BY (Signature)					DATE/TIME					CHAIN OF CUSTODY SEALS Y/N/NA						
																				SEALS INTACT? Y/N/NA						
																				RECEIVED GOOD COND./COLD						
																				NOTES:						



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
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Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/12/2014	8/12/2014	102	nd	nd
LCS	8/12/2014	8/12/2014	89	100%	---
NEF1	8/13/2014	8/13/2014	100	nd	nd
NE2S	8/13/2014	8/13/2014	101	nd	nd
NE2S Duplicate	8/13/2014	8/13/2014	101	nd	nd
SEC	8/12/2014	8/12/2014	101	nd	nd
NEF2	8/13/2014	8/13/2014	129	nd	nd
NE1	8/13/2014	8/13/2014	96	nd	260
PI7	8/13/2014	8/13/2014	102	nd	nd
PI4-2	8/13/2014	8/13/2014	101	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/12/2014	8/12/2014	nd	nd	nd	nd	nd	97
LCS	8/12/2014	8/12/2014	107%	102%	100%	108%	103%	98
LCSD	8/12/2014	8/12/2014	104%	101%	101%	103%	---	95
NEF1	8/12/2014	8/15/2015	0.09	nd	nd	0.40	nd	103
NE2S	8/12/2014	8/12/2014	0.68	0.19	0.33	3.0	49	99
SEC	8/12/2014	8/12/2014	0.03	nd	nd	nd	nd	108
NEF2	8/12/2014	8/15/2015	0.13	0.47	3.6	2.1	14	106
NE1	8/12/2014	8/14/2014	0.04	nd	0.07	0.64	28	107
PI7	8/12/2014	8/14/2014	0.29	1.8	0.27	1.8	35	113
PI4-2	8/12/2014	8/12/2014	nd	nd	nd	nd	nd	103
PI4-2 Duplicate	8/12/2014	8/12/2014	nd	nd	nd	nd	nd	113
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** Stanford Environmental Inc. **DATE:** 8/12/2014 **PAGE** 1 **OF** 1  
**ADDRESS:** PO Box 3644 Bremerton, WA **PROJECT NAME:** Environmental Fuel  
**PHONE:** 360 438-5524 **FAX:**  **LOCATION:** Environmental Fuel  
**CLIENT PROJECT #:** 812 **PROJECT MANAGER:** Paul Jones **COLLECTOR:** Paul Jones **DATE OF COLLECTION:** 8/12

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	DRO Suite	WFO Suite	NOTES	Total Number of Containers	Note Number
1. NEF1	9"		Sal	IM		X	X	X													
2. NEZS	4"		"	"		X	X	X													
3. SEC	8		"	"		X	X	X													
4. NEF2			"	"		X	X	X													
5. NEF1			"	"		X	X	X													
6. PEF7						X	X	X													
7. PEF2						X	X	X													
8. SE																					
9.																					
10.																					
11.																					
12.																					
13.																					
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15.																					
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17.																					
18.																					

**RELINQUISHED BY (Signature)** Paul Jones **DATE/TIME** 8/12/2014 **RECEIVED BY (Signature)** Paul Jones **DATE/TIME** 8/12/2014  
**RELINQUISHED BY (Signature)** Paul Jones **DATE/TIME** 8/12/2014 **RECEIVED BY (Signature)** Paul Jones **DATE/TIME** 8/12/2014  
**LABORATORY NOTES:**  
 TOTAL NUMBER OF CONTAINERS  
 CHAIN OF CUSTODY SEALS Y/N/NA  
 SEALS INTACT? Y/N/NA  
 RECEIVED GOOD COND./COLD  
 NOTES:

NEF1 NEZS SEC NEF2 PEF7



# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnsw.com

## Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/15/2014	8/15/2014	111	nd	nd
LCS	8/15/2014	8/15/2014	84	93%	---
PI13	8/15/2014	8/15/2014	97	nd	nd
PI15	8/15/2014	8/15/2014	86	nd	nd
PI16	8/15/2014	8/15/2014	101	nd	nd
PI14	8/16/2014	8/16/2014	107	nd	nd
PI14 Duplicate	8/16/2014	8/16/2014	121	nd	nd
TF1	8/16/2014	8/16/2014	110	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

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1210 Eastside Street SE Suite 200  
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lab@esnmw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	104
LCS	8/14/2014	8/18/2014	98%	89%	96%	93%	72%	95
LCSD	8/14/2014	8/18/2014	100%	88%	97%	96%	---	100
PI13	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	99
PI13 Duplicate	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	88
PI15	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	93
PI16	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	87
PI14	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	87
TF1	8/14/2014	8/18/2014	nd	nd	nd	nd	nd	90
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** Stemmed Environmental, Inc. **DATE:** 8/14/2004 **PAGE** 1 **OF** 1  
**ADDRESS:** P.O. Box 3044 Bury, WA **PROJECT NAME:** Fluoride Fine  
**PHONE:** 360 438 5521 **FAX:**  **LOCATION:** Temperance, WA  
**CLIENT PROJECT #:** Fluoride **PROJECT MANAGER:** Dave Strand **COLLECTOR:** Dave Strand **DATE OF COLLECTION:** 8/14

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260CL	VOC 8260	SemiVol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	Notes	Total Number of Containers	Note Number
1. <u>PI13</u>			<u>Soil</u>	<u>5gal</u>		<u>X</u>	<u>X</u>	<u>X</u>															
2. <u>PI15</u>			<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>	<u>X</u>															
3. <u>PI16</u>			<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>	<u>X</u>															
4. <u>PI14</u>						<u>X</u>	<u>X</u>	<u>X</u>															
5. <u>TF1</u>						<u>X</u>	<u>X</u>	<u>X</u>															
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**RELINQUISHED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004  
**RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004  
**RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004  
**RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8/14/2004



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/16/2014	8/16/2014	129	nd	nd
LCS	8/16/2014	8/16/2014	92	93%	---
PI18	8/16/2014	8/16/2014	115	nd	nd
T14	8/16/2014	8/16/2014	99	62	nd
T15	8/16/2014	8/16/2014	124	nd	nd
T13	8/16/2014	8/16/2014	118	nd	nd
PI19	8/16/2014	8/16/2014	121	nd	nd
TF3	8/17/2014	8/17/2014	111	nd	nd
T18	8/17/2014	8/17/2014	112	nd	nd
TF4	8/17/2014	8/17/2014	113	nd	nd
T19	8/17/2014	8/17/2014	111	nd	nd
SP9	8/17/2014	8/17/2014	96	1500	nd
SP10	8/17/2014	8/17/2014	94	900	nd
SP11	8/17/2014	8/17/2014	137	700	nd
SP11 Duplicate	8/17/2014	8/17/2014	int	530	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnmw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/15/2014	8/18/2014	nd	nd	nd	nd	nd	104
LCS	8/15/2014	8/18/2014	98%	89%	96%	93%	72%	95
LCSD	8/15/2014	8/18/2014	100%	88%	97%	96%	---	100
PI18	8/15/2014	8/20/2014	0.06	nd	nd	0.18	nd	105
T14	8/15/2014	8/19/2014	nd	0.06	nd	nd	nd	110
T15	8/15/2014	8/18/2014	nd	nd	nd	nd	nd	98
T13	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	109
T13 Duplicate	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	111
PI19	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	106
TF3	8/15/2014	8/20/2014	0.08	nd	nd	0.50	nd	106
T18	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	103
TF4	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	98
T19 ✓	8/15/2014	8/20/2014	nd	nd	nd	nd	nd	101
SP9	8/15/2014	8/19/2014	0.03	nd	0.05	nd	nd	111
SP10	8/15/2014	8/19/2014	0.06	nd	0.06	0.28	nd	109
SP11	8/15/2014	8/19/2014	0.02	nd	nd	0.19	nd	109
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

CLIENT: Stemmer Environmental Inc. DATE: 8/15/2014 PAGE 1 OF 1

ADDRESS: 1210 Eastside Street SE, Suite 200

PHONE: 360 438 9521 FAX:

CLIENT PROJECT #: PERISTONE PROJECT MANAGER: Paul Brown

PROJECT NAME: PERISTONE FURN

LOCATION: 1210 Eastside Street

COLLECTOR: Paul Brown DATE OF COLLECTION: 8/15

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260CL	VOC 8260	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WFO Suite	NOTES	Total Number of Containers	Note Number
1. <u>PT18</u>			<u>Soil</u>	<u>Jar</u>		<u>2</u>	<u>2</u>	<u>2</u>															
2. <u>FI4</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
3. <u>TI5</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
4. <u>TI3</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
5. <u>PI19</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
6. <u>TF3</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
7. <u>TI8</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
8. <u>TF4</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
9. <u>TI8</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
10. <u>TI9</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
11. <u>SP9</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
12. <u>SP10</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
13. <u>SP11</u>				<u>"</u>		<u>2</u>	<u>2</u>	<u>2</u>															
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18.																							

RELINQUISHED BY (Signature) Paul Brown DATE/TIME 8/15/2014 RECEIVED BY (Signature) Paul Brown DATE/TIME 8/15/2014

RELINQUISHED BY (Signature) Paul Brown DATE/TIME 8/15/2014 RECEIVED BY (Signature) Paul Brown DATE/TIME 8/15/2014

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	8/25/2014	8/25/2014	92	nd	nd
LCS	8/25/2014	8/25/2014	79	71%	---
T5	8/26/2014	8/26/2014	86	nd	nd
T19	8/26/2014	8/26/2014	81	nd	nd
T19 Duplicate	8/26/2014	8/26/2014	92	nd	nd
T21	8/26/2014	8/26/2014	87	nd	nd
TF9	8/26/2014	8/26/2014	87	nd	nd
TF7	8/26/2014	8/26/2014	97	nd	nd
TF8	8/26/2014	8/26/2014	81	nd	nd
TF6	8/26/2014	8/26/2014	86	nd	nd
T22	8/25/2014	8/25/2014	75	nd	nd
T22 Duplicate	8/25/2014	8/25/2014	68	nd	nd
T20	8/25/2014	8/25/2014	71	nd	nd
T23	8/25/2014	8/25/2014	77	nd	nd
TF10	8/25/2014	8/25/2014	72	nd	nd
TF12	8/25/2014	8/26/2014	80	nd	nd
S30	8/25/2014	8/25/2014	70	nd	nd
S31	8/25/2014	8/25/2014	79	nd	nd
S32	8/25/2014	8/25/2014	76	nd	nd
SP11	8/25/2014	8/25/2014	80	nd	nd
SP12	8/25/2014	8/25/2014	80	nd	nd
SP13	8/25/2014	8/25/2014	75	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnwn.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/24/2014	8/24/2014	nd	nd	nd	nd	nd	96
LCS	8/24/2014	8/24/2014	109%	98%	94%	107%	84%	94
LCSD	8/24/2014	8/24/2014	94%	84%	93%	95%	---	97
T5	8/15/2014	8/23/2014	nd	nd	nd	nd	nd	99
T19	8/15/2014	8/23/2014	nd	nd	nd	nd	nd	97
T21	8/15/2014	8/23/2014	nd	nd	nd	nd	nd	90
TF9	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	86
TF7	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	84
TF8	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	80
TF6	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	85
T22	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	94
T20	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	85
T20 Duplicate	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	81
T23	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	99
TF10	8/15/2014	8/24/2014	nd	nd	nd	nd	nd	93
TF12	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	92
TF12 Duplicate	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	92
S30	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	94
S31	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	90
S32	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	88
SP11	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	88
SP12	8/15/2014	8/25/2014	nd	nd	nd	0.15	nd	98
SP13	8/15/2014	8/25/2014	nd	nd	nd	nd	nd	97
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

CLIENT: <u>STAND ENVIRONMENTAL INC.</u>		DATE: <u>8/15/2014</u> PAGE <u>1</u> OF <u>1</u>																						
ADDRESS: <u>PO BOX 3648</u>		PROJECT NAME: <u>Flintstone Fee</u>																						
PHONE: <u>3604395521</u> FAX: <u></u>		LOCATION: <u>Tumwater, WA</u>																						
CLIENT PROJECT #: <u>FLINTSTONE</u>		COLLECTOR: <u>Dave Brown</u> DATE OF COLLECTION: <u>8/15</u>																						
PROJECT MANAGER: <u>Dave Brown</u>																								
Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										Notes	Total Number of Containers	Note Number							
					TPH - HCLD	TPH - Diesel & Oil	BTEX	VOC 8260	Semivol 8270	PAHs 8270	PCBs 8270	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite						
1. <u>T5</u>			<u>Soil</u>	<u>6655</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
2. <u>T19</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
3. <u>T21</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
4. <u>T24</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
5. <u>T27</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
6. <u>T28</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
7. <u>T22</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
8. <u>T26</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
9. <u>T26</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
10. <u>T26</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
11. <u>T23</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
12. <u>T210</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
13. <u>T212</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
14. <u>105530 81</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
15. <u>531-51</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
16. <u>532-91</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
17. <u>5011</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
18. <u>5012</u>					X	X	X	X	X	X	X	X	X	X	X	X	X	X						
RELINQUISHED BY (Signature)					DATE/TIME					RECEIVED BY (Signature)					DATE/TIME					LABORATORY NOTES:				
<u>[Signature]</u>					<u>8-18-14</u>					<u>[Signature]</u>					<u>10:03</u>					TOTAL NUMBER OF CONTAINERS				
<u>[Signature]</u>					<u>8-18-14</u>					<u>[Signature]</u>					<u>10:03</u>					CHAIN OF CUSTODY SEALS Y/N/NA				
<u>[Signature]</u>					<u>8-18-14</u>					<u>[Signature]</u>					<u>10:03</u>					SEALS INTACT? Y/N/NA				
<u>[Signature]</u>					<u>8-18-14</u>					<u>[Signature]</u>					<u>10:03</u>					RECEIVED GOOD COND./COLD				
<u>[Signature]</u>					<u>8-18-14</u>					<u>[Signature]</u>					<u>10:03</u>					NOTES:				



# CHAIN-OF-CUSTODY RECORD

<b>CLIENT:</b> <u>Stard Environmental Inc</u>				<b>DATE:</b> <u>8/15/2014</u>		<b>PAGE</b> <u>1</u> <b>OF</b> <u>1</u>	
<b>ADDRESS:</b> _____				<b>PROJECT NAME:</b> <u>Fluorinated Paver</u>			
<b>PHONE:</b> <u>360-459-9524</u>				<b>LOCATION:</b> <u>Turner, WA</u>			
<b>FAX:</b> _____				<b>COLLECTOR:</b> <u>Paul Spence</u>			
<b>CLIENT PROJECT #:</b> <u>14050000</u>				<b>DATE OF COLLECTION:</b> <u>8/15</u>			
<b>PROJECT MANAGER:</b> <u>Paul Spence</u>							

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES										NOTES	Total Number of Containers	Laboratory Note Number	
					TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260CL	VOC 8260	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals				Pb
1. <u>SP-13</u>			<u>Soil</u>	<u>Ty</u>														
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
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12.																		
13.																		
14.																		
15.																		
16.																		
17.																		
18.																		

<b>RELINQUISHED BY (Signature)</b> 	<b>DATE/TIME</b>	<b>RECEIVED BY (Signature)</b>	<b>DATE/TIME</b>	<b>LABORATORY NOTES:</b>  TOTAL NUMBER OF CONTAINERS CHAIN OF CUSTODY SEALS Y/N/NA SEALS INTACT? Y/N/NA RECEIVED GOOD COND./COLD	
	<u>8-18-14</u>		<u>1000</u>		
	<b>RELINQUISHED BY (Signature)</b>	<b>DATE/TIME</b>	<b>RECEIVED BY (Signature)</b>		<b>DATE/TIME</b>

Turn Around Time: 24 HR 48 HR 5 DAY



**ESN NORTHWEST CHEMISTRY LABORATORY**

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnsw.com

**Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil  
by Method NWTPH-Dx Extended**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	9/5/2014	9/5/2014	87	nd	nd
LCS	9/5/2014	9/5/2014	99	109%	---
PI26	9/5/2014	9/5/2014	74	nd	nd
PI22	9/5/2014	9/5/2014	85	nd	nd
PI32	9/5/2014	9/5/2014	73	nd	nd
PI23	9/5/2014	9/5/2014	81	nd	nd
PINE	9/5/2014	9/5/2014	77	nd	nd
NEC3	9/5/2014	9/5/2014	75	nd	nd
NEC3 Duplicate	9/5/2014	9/5/2014	71	nd	nd
NF1-2	9/5/2014	9/5/2014	70	nd	nd
NF2-2	9/5/2014	9/5/2014	90	nd	nd
PI27	9/5/2014	9/5/2014	82	nd	nd
PI29-2	9/5/2014	9/5/2014	92	nd	nd
PINW	9/5/2014	9/5/2014	82	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NW/TPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	9/8/2014	9/8/2014	nd	nd	nd	nd	nd	101
LCS	9/8/2014	9/8/2014	88%	78%	85%	85%	103%	94
LCSD	9/8/2014	9/8/2014	89%	83%	82%	89%	---	97
PI26	8/27/2014	9/4/2014	nd	nd	nd	nd	nd	100
PI22	8/27/2014	9/8/2014	nd	nd	nd	0.18	nd	97
PI32	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	93
PI23	8/27/2014	9/8/2014	nd	nd	nd	0.21	nd	99
PINE	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	96
NEC3	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	102
NF1-2	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	107
NF2-2	8/27/2014	9/8/2014	nd	nd	nd	0.18	nd	96
PI27	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	97
PI29-2	8/27/2014	9/8/2014	nd	nd	nd	nd	nd	99
PINW	8/27/2014	9/8/2014	0.05	nd	nd	nd	nd	95
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

CLIENT: STEMMED ENVIRONMENTAL DATE: 8/27/2014 PAGE 1 OF 1

ADDRESS: 20 Box 344 PROJECT NAME: FLINTSTONE FIRE SITE

PHONE: 360 438 9524 LOCATION: LUMMUMBA, WA

CLIENT PROJECT #: FLINTSTONE PROJECT MANAGER: DAVE STANLEY COLLECTOR: DAVE STANLEY DATE OF COLLECTION: 8/27

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCL	TPH - Diesel & Oil	TPH - Gasoline	VOC 8260CL	VOC 8260	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. <u>PT 26</u>			<u>Soil</u>	<u>jar</u>																			
2. <u>PT 22</u>			<u>"</u>	<u>"</u>																			
3. <u>PT 32</u>			<u>"</u>	<u>"</u>																			
4. <u>PT 23</u>			<u>"</u>	<u>"</u>																			
5. <u>PT 12</u>			<u>"</u>	<u>"</u>																			
6. <u>NEC 3</u>			<u>"</u>	<u>"</u>																			
7. <u>PT 31</u>			<u>"</u>	<u>"</u>																			
8. <u>NEC 1-2</u>			<u>"</u>	<u>"</u>																			
9. <u>PT 2-2</u>			<u>"</u>	<u>"</u>																			
10. <u>PT 27</u>			<u>"</u>	<u>"</u>																			
11. <u>PT 29-2</u>			<u>"</u>	<u>"</u>																			
12. <u>PINW</u>			<u>"</u>	<u>"</u>																			
13.																							
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16.																							
17.																							
18.																							

RELINQUISHED BY (Signature) [Signature] DATE/TIME 8/27/2014 RECEIVED BY (Signature) [Signature] DATE/TIME 8/27/14

RELINQUISHED BY (Signature) [Signature] DATE/TIME 8/27/2014 RECEIVED BY (Signature) [Signature] DATE/TIME 8/27/14

LABORATORY NOTES:

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD

NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	9/3/2014	9/3/2014	91	nd	nd
LCS	9/3/2014	9/3/2014	102	101%	---
PI31	9/3/2014	9/3/2014	91	nd	nd
PI35	9/5/2014	9/5/2014	82	nd	nd
PI35 Duplicate	9/5/2014	9/5/2014	89	nd	nd
PI34	9/5/2014	9/5/2014	83	nd	nd
PI36	9/5/2014	9/5/2014	78	nd	nd
PI37	9/5/2014	9/5/2014	82	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	8/31/2014	8/31/2014	nd	nd	nd	nd	nd	111
LCS	8/31/2014	8/31/2014	109%	94%	100%	99%	88%	104
LCSD	8/31/2014	8/31/2014	108%	95%	92%	99%	---	99
PI31	8/28/2014	8/31/2014	nd	nd	nd	nd	nd	102
PI35	8/28/2014	8/31/2014	nd	nd	nd	nd	nd	108
PI34	8/28/2014	9/4/2014	0.03	nd	0.16	nd	nd	103
PI34 Duplicate	8/28/2014	9/4/2014	0.04	nd	nd	0.16	nd	102
PI36	8/28/2014	9/4/2014	nd	nd	nd	0.25	nd	100
PI37	8/28/2014	9/4/2014	nd	nd	nd	nd	nd	104
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** Stemmed Environmental Services Inc. **DATE:** 8/28/2014 **PAGE** 1 **OF** 1  
**ADDRESS:** P.O. Box 3644, Everett, WA 98201 **PROJECT NAME:** FLUORSTON FUEL  
**PHONE:** 360-438-5021 **FAX:**  **LOCATION:** Typical, but  
**CLIENT PROJECT #:** FLUORSTON **PROJECT MANAGER:** Steve Smith **COLLECTOR:** Steve Smith **DATE OF COLLECTION:** 8/28

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCL	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WFO Suite	NOTES	Total Number of Containers	Note Number
1. <u>PT 31</u>			<u>Soil</u>	<u>Soil</u>		<u>X</u>	<u>X</u>	<u>X</u>												<u>NEPIC</u>		
2. <u>PT 32</u>			<u>Soil</u>	<u>Soil</u>		<u>X</u>	<u>X</u>	<u>X</u>												<u>None</u>		
3. <u>PT 34</u>			<u>Soil</u>	<u>Soil</u>		<u>X</u>	<u>X</u>	<u>X</u>														
4. <u>PT 36</u>			<u>Soil</u>	<u>Soil</u>		<u>X</u>	<u>X</u>	<u>X</u>														
5. <u>PT 37</u>			<u>Soil</u>	<u>Soil</u>		<u>X</u>	<u>X</u>	<u>X</u>														
6.																						
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
13.																						
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18.																						

**RELINQUISHED BY (Signature)** [Signature] **DATE/TIME** 8/28/2014 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8-28-14 1545  
**RELINQUISHED BY (Signature)** [Signature] **DATE/TIME** 8/28/2014 **RECEIVED BY (Signature)** [Signature] **DATE/TIME** 8-28-14 1545  
**LABORATORY NOTES:**  
 TOTAL NUMBER OF CONTAINERS  
 CHAIN OF CUSTODY SEALS Y/N/NA  
 SEALS INTACT? Y/N/NA  
 RECEIVED GOOD COND./COLD  
 NOTES:



October 6, 2014

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tumwater, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, and BTEX by Method 8260 on September 29, 2014.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnsw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	9/26/2014	9/26/2014	102	nd	nd
LCS	9/26/2014	9/26/2014	91	69%	---
PI34-2	9/26/2014	9/26/2014	107	nd	nd
PI34-2 Duplicate	9/26/2014	9/26/2014	140	nd	nd
PINW-2	9/26/2014	9/26/2014	102	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	9/26/2014	9/26/2014	nd	nd	nd	nd	nd	129
LCS	9/26/2014	9/26/2014	96%	87%	93%	93%	88%	117
LCSD	9/26/2014	9/26/2014	107%	96%	102%	103%	---	114
PI34-2	9/26/2014	9/26/2014	nd	nd	nd	nd	nd	122
PINW-2	9/26/2014	9/26/2014	nd	nd	nd	nd	nd	126
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%



CLIENT: STEVEN EVANOWSKI FOR  
ADDRESS: PO Box 3644 Lacey, WA  
PHONE: 360 438-9521 FAX:  
CLIENT PROJECT #: FL15006 PROJECT MANAGER: PAUL SPANIEL

[illegible]

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT	LABORATORY NOTES:
<i>[Signature]</i>	9/24/2014	<i>[Signature]</i>	9-26-14 1230	TOTAL NUMBER OF CONTAINERS	
				CHAIN OF CUSTODY SEALS Y/N/NA	
				SEALS INTACT? Y/N/NA	
				RECEIVED GOOD COND./COLD	
				NOTES:	

Turn Around Time: 24 HR 48 HR 5 DAY

1210 Eastside Street SE, Suite 200  
Olympia, Washington 98501



October 16, 2014

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tumwater, Washington. Probe services were conducted on October 9, 2014. Water samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, Gasoline by NWTPH-Gx, BTEX by Method 8260, and Pb by Method 6020 on October 9-14, 2014.

The results of these analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	10/10/2014	10/10/2014	111	nd	nd
LCS	10/10/2014	10/10/2014	102	73%	---
W1	10/10/2014	10/10/2014	102	nd	nd
W2	10/10/2014	10/10/2014	110	nd	nd
Reporting Limits				250	500

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	10/9/2014	nd	nd	nd	nd	nd	132
LCS	10/9/2014	108%	92%	101%	104%	106%	111
LCSD	10/9/2014	114%	98%	112%	108%	---	109
W1	10/9/2014	<b>10</b>	<b>1.2</b>	nd	<b>4.0</b>	<b>1300</b>	129
W1-Duplicate	10/9/2014	<b>9.9</b>	<b>1.4</b>	nd	<b>4.0</b>	<b>1600</b>	125
W2	10/9/2014	nd	nd	nd	nd	<b>250</b>	127
Trip Blank	10/9/2014	nd	nd	nd	nd	nd	126
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS: 65% TO 135%

## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Total Lead in Water by EPA-6020 Method

Sample Number	Date Analyzed	Lead (Pb) (ug/L)
Method Blank	10/14/2014	nd
W1	10/14/2014	nd
W2	10/14/2014	nd

Reporting Limits 2.0

"nd" Indicates not detected at listed detection limits.

### QA/QC Data - Total Metals EPA-6020

Laboratory Control Sample			Laboratory Control Sample Duplicate			RPD	
Spiked Conc. (ug/L)	Measured Conc. (ug/L)	Spike Recovery (%)	Spiked Conc. (ug/L)	Measured Conc. (ug/L)	Spike Recovery (%)	(%)	
Lead	20.0	21.7	109	20.0	21.7	109	0.00

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 35%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** STEWART ENVIRONMENTAL INC **DATE:** 10-9-2014 **PAGE** 1 **OF** 1  
**ADDRESS:** P.O. Box 3644 Bellingham, WA **PROJECT NAME:** Fluorocarbon  
**PHONE:** 360 438 7521 **FAX:**  **LOCATION:** Tumwater, WA  
**CLIENT PROJECT #:** Fluorocarbon **PROJECT MANAGER:** Paul Brown **COLLECTOR:** Paul Brown **DATE OF COLLECTION:** 10/9

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HClD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8270	CL Pesticides 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. <u>W1</u>	<u>10.5</u>		<u>170</u>	<u>608</u>		<u>2</u>	<u>2</u>																
2. <u>W2</u>	<u>10.5</u>		<u>"</u>	<u>"</u>		<u>2</u>	<u>2</u>																
3.																							
4.																							
5.																							
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18.																							

**RELINQUISHED BY (Signature)** Paul Brown **DATE/TIME** 10-9-2014 **RECEIVED BY (Signature)** Paul Brown **DATE/TIME** 10-9-2014  
**RELINQUISHED BY (Signature)** Paul Brown **DATE/TIME** 10-9-2014 **RECEIVED BY (Signature)** Paul Brown **DATE/TIME** 10-9-2014  
**LABORATORY NOTES:** IF HTS FOR LEAD PWD D. 10/10/14  
**TURN AROUND TIME:** 24 HR 48 HR 5 DAY



July 1, 2015

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tumwater, Washington. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended with Silica Gel Cleanup and MTCA 5 Metals by Method 8260 on June 23, 2015.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
President



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended with Silica Gel Clean Up

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	6/23/2015	6/23/2015	133	nd	nd
LCS	6/23/2015	6/23/2015	114	89%	---
EF	6/23/2015	6/23/2015	89	nd	3200
WF	6/23/2015	6/23/2015	131	nd	780
ESW	6/23/2015	6/23/2015	99	nd	560
WSW	6/23/2015	6/23/2015	107	nd	2500
NSW	6/23/2015	6/23/2015	81	nd	8700
SSW	6/23/2015	6/23/2015	78	nd	3600
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

## Total Metals in Soil by EPA-6020 Series

Sample Number	Date Analyzed	Lead (Pb) (mg/kg)	Cadmium (Cd) (mg/kg)	Chromium (Cr) (mg/kg)	Arsenic (As) (mg/kg)	Mercury (Hg) (mg/kg)
Method Blank	6/29/2015	nd	nd	nd	nd	nd
NSW	6/29/2015	15	nd	42	nd	nd
Reporting Limits		5.0	1.0	5.0	5.0	0.5

## QA/QC Data - Total Metals EPA-6020

Sample Number: QC Batch							
	Spiked Conc. (mg/kg)	Matrix Spike		Matrix Spike Duplicate			RPD
		Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
Lead	96.6	89.3	92.4	91.7	85.6	93.3	1.0
Cadmium	96.6	90.9	94.1	91.7	85.2	92.9	1.3
Chromium	96.6	100	103	91.7	76.4	83.3	21.4
Arsenic	96.6	96.1	99.5	91.7	89.9	98.0	1.5
Mercury	9.66	8.67	89.8	9.17	8.25	90.0	0.2

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead	100	82.9	82.9
Cadmium	100	91.9	91.9
Chromium	100	88.5	88.5
Arsenic	100	91.7	91.7
Mercury	10.0	8.22	82.2

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 35%



# CHAIN-OF-CUSTODY RECORD

CLIENT: STEWART ENVIRONMENTAL INC DATE: 6/22/2015 PAGE 1 OF 1  
 ADDRESS: PO Box 3644 Leavenworth, WA PROJECT NAME: FLINTSTONE FUEL  
 PHONE: 360-438-2521 FAX:  LOCATION: Leavenworth, WA  
 CLIENT PROJECT #: FLINTSTONE PROJECT MANAGER: Paul Stearns COLLECTOR: Paul Stearns DATE OF COLLECTION: 6/20

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCLD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. EF	20"		Soil	30L Jar																		
2. WF	28"																					
3. ESU	19"																					
4. WSW	17"																					
5. WSW	18"																					
6. SSW	19"																					
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
13.																						
14.																						
15.																						
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18.																						

RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15  
 RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15  
 TOTAL NUMBER OF CONTAINERS 18  
 CHAIN OF CUSTODY SEALS Y/N/NA Y  
 SEALS INTACT? Y/N/NA Y  
 RECEIVED GOOD COND./COLD Y  
 NOTES: SILICA GEL SCREEN



July 21, 2015

Paul Stemen  
Stemen Environmental  
P.O. Box 3644  
Lacey, WA 98509

Dear Mr. Stemen:

Please find enclosed the analytical data report for the Flintstone Fuel Project in Tumwater, Washington. Probe services were conducted on July 9, 2015. Soil samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended with Silica Gel Cleanup, PAH's by Method 8270, and MTCA 5 Metals by Method 6020 on July 8 - 20, 2015.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Stemen Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we look forward to the next opportunity to work together.

Sincerely,



Michael A. Korosec  
*President*



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnvw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended with Silica Gel Clean Up

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	7/8/2015	7/8/2015	105	nd	nd
LCS	7/8/2015	7/8/2015	120	70%	---
S1	7/8/2015	7/8/2015	84	nd	nd
S2	7/8/2015	7/8/2015	89	nd	nd
S2 Duplicate	7/8/2015	7/8/2015	90	nd	nd
S3	7/8/2015	7/8/2015	111	nd	nd
S5	7/8/2015	7/8/2015	63	nd	nd
S4	7/8/2015	7/8/2015	64	nd	nd
S6	7/8/2015	7/8/2015	125	nd	nd
S7	7/8/2015	7/8/2015	85	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** STEVEN ENVIRONMENTAL  
**ADDRESS:** \_\_\_\_\_  
**PHONE:** 438-9521 **FAX:** \_\_\_\_\_  
**CLIENT PROJECT #:** \_\_\_\_\_ **PROJECT MANAGER:** PAUL STEMON  
**DATE:** 7/8/16 **PAGE:** 1 **OF:** \_\_\_\_\_  
**PROJECT NAME:** FLINTSTONE FUEL  
**LOCATION:** TUMWATER, WA  
**COLLECTOR:** PAUL S **DATE OF COLLECTION:** 7/8/15

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - Diesel & Oil	TPH - Gasoline	BTEX	VOC 8260CL	Semivol 8270	PCBs 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. S1			Soil	402		X	X														
2. S2			Soil	402		X	X														
3. S3			Soil	402		X	X														
4. S6			Soil	402		X	X														
5. S4			Soil	402		X	X														
6. S6			Soil	402		X	X														
7. S7			Soil	402		X	X														
8.																					
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**RELINQUISHED BY (Signature)** \_\_\_\_\_ **DATE/TIME** 7-8-15  
**RECEIVED BY (Signature)** \_\_\_\_\_ **DATE/TIME** 7-8-15  
**RELINQUISHED BY (Signature)** \_\_\_\_\_ **DATE/TIME** \_\_\_\_\_  
**RECEIVED BY (Signature)** \_\_\_\_\_ **DATE/TIME** \_\_\_\_\_  
**LABORATORY NOTES:** Add-on 7/16 48-hr  
**Turn Around Time:** 24 HR 48 HR 5 DAY



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnsw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended with Silica Gel Clean Up

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	7/13/2015	7/13/2015	71	nd	nd
LCS	7/13/2015	7/13/2015	97	73%	---
S9	7/13/2015	7/13/2015	106	69	220
S10	7/13/2015	7/13/2015	76	nd	240
S11	7/13/2015	7/13/2015	80	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



# CHAIN-OF-CUSTODY RECORD

**CLIENT:** STEVEN ENVIRONMENTAL FOR  
**ADDRESS:** PO Box 3644 Lakewood, WA  
**PHONE:** 360-438-5521 **FAX:**  
**CLIENT PROJECT #:**  
**PROJECT MANAGER:** Dave Stewart  
**DATE:** 7/13/2015 **PAGE** 1 **OF** 1  
**PROJECT NAME:** FLORESTAD  
**LOCATION:** TUMPKATON, WA  
**COLLECTOR:** Dave Stewart **DATE OF COLLECTION:** 7/13/15

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - Diesel & Oil	TPH - Gasoline	BTX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8270	CL Pesticides 8082	RCRA 8 Metals	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	Notes	Total Number of Containers	Note Number
1. 599	38"		Soil	12																			
2. 510	40"		Soil	12																			
3. 511	41"		Soil	12																			
4.																							
5.																							
6.																							
7.																							
8.																							
9.																							
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18.																							

**RELINQUISHED BY (Signature)** *[Signature]* **DATE/TIME** 7/13/15  
**RECEIVED BY (Signature)** *[Signature]* **DATE/TIME** 7/13/15  
**LABORATORY NOTES:** (X) ADD-ON 7/16 48-HR  
**TURN AROUND TIME:** 24 HR 48 HR 5 DAY



1210 Eastside Street SE, Suite 200  
Olympia, Washington 98501  
Phone: 360-459-4670  
Fax: 360-459-3432  
Website: [www.esnnw.com](http://www.esnnw.com)  
E-Mail: [info@esnnw.com](mailto:info@esnnw.com)



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnww.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended with Silica Gel Clean Up

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	7/14/2015	7/14/2015	90	nd	nd
LCS	7/14/2015	7/14/2015	87	64%	---
S12	7/14/2015	7/14/2015	82	nd	nd
S13	7/14/2015	7/14/2015	84	nd	<b>1500</b>
S14	7/14/2015	7/14/2015	67	nd	<b>2000</b>
S15	7/14/2015	7/14/2015	89	nd	<b>1500</b>
S15-Duplicate	7/14/2015	7/14/2015	76	nd	<b>1400</b>
S16	7/14/2015	7/14/2015	81	nd	<b>380</b>
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



## ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnsw.com

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	7/16/2015	7/16/2015	86	nd	nd
LCS	7/16/2015	7/16/2015	72	61%	---
S14-2	7/16/2015	7/16/2015	77	nd	210
S14-2 Duplicate	7/16/2015	7/16/2015	75	nd	230
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

# CHAIN-OF-CUSTODY RECORD

**CLIENT:** STEWART ENVIRONMENTAL INC. **DATE:** 7/15/2015 **PAGE** 1 **OF** 1  
**ADDRESS:** PO BOX 3644, WADE, WA **PROJECT NAME:** FUNTSIDE FUEL  
**PHONE:** 360-438-5521 **FAX:**  **LOCATION:** TUMWATER, WA  
**CLIENT PROJECT #:** 460150001 **PROJECT MANAGER:** PAUL STENSON **COLLECTOR:** PAUL STENSON **DATE OF COLLECTION:** 7/15

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HClD	TPH - Diesel & Oil	BTX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WO Suite	NOTES	Total Number of Containers	Note Number
1. <u>514-2</u>			<u>Soil</u>	<u>JAR</u>																		
2.																						
3.																						
4.																						
5.																						
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**RELINQUISHED BY (Signature):** [Signature] **DATE/TIME:** 7-15-15  
**RECEIVED BY (Signature):** [Signature] **DATE/TIME:** 7-15-15  
**RELINQUISHED BY (Signature):** [Signature] **DATE/TIME:** 7-15-15  
**RECEIVED BY (Signature):** [Signature] **DATE/TIME:** 7-15-15

**LABORATORY NOTES:**  
 TOTAL NUMBER OF CONTAINERS: 1  
 CHAIN OF CUSTODY SEALS Y/N/NA: Y  
 SEALS INTACT? Y/N/NA: Y  
 RECEIVED GOOD COND./COLD: Y  
 NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY



# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Analysis of Polynuclear Aromatic Hydrocarbons in Soil by Method 8270

### Analytical Results

	RL	MB	LCS	NSW	MS	MSD	RPD
Date extracted		07/16/15	07/16/15	07/16/15	07/16/15	07/16/15	
Date analyzed		07/16/15	07/16/15	07/16/15	07/16/15	07/16/15	
Moisture, %	(mg/kg)		2%				
Naphthalene	0.02	nd	77%	nd			
2-Methylnaphthalene	0.02	nd	90%	nd			
1-Methylnaphthalene	0.02	nd	--	nd			
Acenaphthylene	0.02	nd	99%	nd			
Acenaphthene	0.02	nd	92%	0.57	64%	76%	17%
Fluorene	0.02	nd	108%	nd			
Phenanthrene	0.02	nd	71%	nd			
Anthracene	0.02	nd	88%	nd			
Fluoranthene	0.02	nd	92%	nd			
Pyrene	0.02	nd	86%	0.73	66%	76%	14%
Benzo(a)anthracene*	0.02	nd	68%	nd			
Chrysene*	0.02	nd	99%	nd			
Benzo(b)fluoranthene*	0.02	nd	63%	nd			
Benzo(k)fluoranthene*	0.02	nd	98%	nd			
Benzo(a)pyrene*	0.02	nd	66%	nd			
Indeno(1,2,3-cd)pyrene*	0.02	nd	109%	nd			
Dibenzo(a,h)anthracene*	0.02	nd	89%	nd			
Benzo(ghi)perylene	0.02	nd	71%	nd			
Total Carcinogens				nd			
Surrogate recoveries:							
2-Fluorobiphenyl		142%	103%	107%	88%	100%	
p-Terphenyl-d14		95%	99%	108%	97%	103%	

### Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte

nd - not detected at listed reporting limits

ns - not spiked

Results reported on dry-weight basis

Acceptable Recovery limits: 50% TO 150%

Acceptable RPD limit: 35%

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Tumwater, Washington

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1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnwn.com

## Total Metals in Soil by EPA-6020 Series

Sample Number	Date Analyzed	Lead (Pb) (mg/kg)	Cadmium (Cd) (mg/kg)	Chromium (Cr) (mg/kg)	Arsenic (As) (mg/kg)	Mercury (Hg) (mg/kg)
Method Blank	7/20/2015	nd	nd	nd	nd	nd
S4	7/20/2015	nd	nd	57	nd	nd
S5	7/20/2015	7.9	nd	24	nd	nd
S5 Duplicate	7/20/2015	8.5	nd	24	nd	nd
S11	7/20/2015	nd	nd	34	nd	nd
S13	7/20/2015	nd	nd	29	nd	nd
S15	7/20/2015	7.6	nd	35	nd	nd
Reporting Limits		5.0	1.0	5.0	5.0	0.5

## QA/QC Data - Total Metals EPA-6020

Sample Number: QC Batch							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Lead	96.6	92.5	95.8	90.5	81.8	90.4	5.8
Cadmium	96.6	97.1	101	90.5	93.5	103	2.7
Chromium	96.6	97.9	101	90.5	96.2	106	4.8
Arsenic	96.6	100	103	90.5	95.0	105	1.8
Mercury	9.66	9.81	102	9.05	8.56	94.6	7.1

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead	100	84.4	84.4
Cadmium	100	104	104
Chromium	100	92.8	92.8
Arsenic	100	105	105
Mercury	10.0	8.41	84.1

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 35%



# ESN NORTHWEST CHEMISTRY LABORATORY

Stemen Environmental, Inc.  
PROJECT FLINTSTONE FUEL  
Tumwater, Washington

ESN Northwest  
1210 Eastside Street SE Suite 200  
Olympia, WA 98501  
(360) 459-4670 (360) 459-3432 Fax  
lab@esnnw.com

## Total Metals in Soil by EPA-6020 Series

Sample Number	Date Analyzed	Lead (Pb) (mg/kg)	Cadmium (Cd) (mg/kg)	Chromium (Cr) (mg/kg)	Arsenic (As) (mg/kg)	Mercury (Hg) (mg/kg)
Method Blank	7/20/2015	nd	nd	nd	nd	nd
S4	7/20/2015	nd	nd	57	nd	nd
S5	7/20/2015	7.9	nd	24	nd	nd
S5 Duplicate	7/20/2015	8.5	nd	24	nd	nd
S11	7/20/2015	nd	nd	34	nd	nd
S13	7/20/2015	nd	nd	29	nd	nd
S15	7/20/2015	7.6	nd	35	nd	nd
Reporting Limits		5.0	1.0	5.0	5.0	0.5

## QA/QC Data - Total Metals EPA-6020

Sample Number: QC Batch							
	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	
Lead	96.6	92.5	95.8	90.5	81.8	90.4	5.8
Cadmium	96.6	97.1	101	90.5	93.5	103	2.7
Chromium	96.6	97.9	101	90.5	96.2	106	4.8
Arsenic	96.6	100	103	90.5	95.0	105	1.8
Mercury	9.66	9.81	102	9.05	8.56	94.6	7.1

Laboratory Control Sample			
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Lead	100	84.4	84.4
Cadmium	100	104	104
Chromium	100	92.8	92.8
Arsenic	100	105	105
Mercury	10.0	8.41	84.1

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 80%-120%  
ACCEPTABLE RPD IS 35%

# CHAIN-OF-CUSTODY RECORD

CLIENT: STEVEN ENVIRONMENTAL INC DATE: 6/22/2015 PAGE 1 OF 1  
 ADDRESS: PO Box 3644 PROJECT NAME: FLINTSTONE FILL  
 PHONE: 360-438-9521 FAX: LOCATION: University WA.  
 CLIENT PROJECT #: FLINTSTONE PROJECT MANAGER: Paul Steen COLLECTOR: Paul Steen DATE OF COLLECTION: 6/20

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL Pesticides 8081	MTCA 5 Metals	Pb	Asbestos - PLM	GRO Suite	DRO Suite	WQ Suite	NOTES	Total Number of Containers	Note Number
1. EP	70"		Soil - Jan			2 x 2 x 2																
2. WF	20"																					
3. ESU	19"																					
4. WSW	17"																					
5. WSW	17"																					
6. SSW	18"																					
7.																						
8.																						
9.																						
10.																						
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RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15  
 RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15  
 TOTAL NUMBER OF CONTAINERS: 6  
 CHAIN OF CUSTODY SEALS Y/N/NA: Y  
 SEALS INTACT? Y/N/NA: Y  
 RECEIVED GOOD COND./COLD: Y  
 NOTES: SILICA GEL SCREENED  
 Turn Around Time: 24 HR (8 HR) 5 DAY



# CHAIN-OF-CUSTODY RECORD

CLIENT: STEMEN ENVIRONMENTAL INC  
 ADDRESS: P.O. Box 3644 Leavenworth, WA  
 PHONE: 360-438-9521 FAX:  
 CLIENT PROJECT #: FLINTSTONE PROJECT MANAGER: Paul Steen

DATE: 6/22/2015 PAGE 1 OF 1  
 PROJECT NAME: FLINTSTONE FILL  
 LOCATION: Timberline LLA  
 COLLECTOR: Paul Steen DATE OF COLLECTION: 6/20

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	TPH - HCD	TPH - Diesel & Oil	BTEX	VOC 8260CL	Semivol 8270	PAH's 8270	PCB's 8082	CL pesticides 8081	MTCA 3 Metals	Pb	Asbestos - PLM	GRO suite	DRO suite	WO suite	Notes	Total Number of Containers	Note Number
1. EP	20"		Soil	Ziploc		2	2	2														
2. WOF	20"																					
3. ESU	19"																					
4. WSW	17"																					
5. WSW	18"																					
6. SSW	18"																					
7.																						
8.																						
9.																						
10.																						
11.																						
12.																						
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RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15

RELINQUISHED BY (Signature) [Signature] DATE/TIME 6/20/2015 RECEIVED BY (Signature) [Signature] DATE/TIME 6/22/15

LABORATORY NOTES: SILICA GEL SCREENED

Turn Around Time: 24 HR 48 HR 5 DAY

# **APPENDIX D**

## **PROPERTY INFORMATION**



## Thurston County Assessor

Parcel Number: 12829130201

Date: 11/23/2016

Situs Address: 2840 BLACK LAKE BLVD SW

Sect/Town/Range: 29 18 2W

Owner: BLACK LAKE QUARRY LLC  
Address: 2840 BLACK LAKE BLVD SW  
TUMWATER, WA 98512

Size: 9.10 Acres

Taxpayer: BLACK LAKE QUARRY LLC  
Address: 2840 BLACK LAKE BLVD SW  
TUMWATER, WA 98512TCA Number: 440  
Neighborhood: 62R1  
Property Type: IND  
Taxable: YES  
Active Exemptions: None  
School District: TUMWATER S.D. #33Abbreviated Legal: Section 29 Township 18 Range 2W Quarter SW NE  
BLA037453TW TR A Document 3593259

## Market Values

Tax Year	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Assessment Year	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Market Value Land	\$381,500	\$381,450	\$372,250	\$372,250	\$358,450	\$367,650	\$523,650	\$739,100	\$565,950	\$527,950
Market Value Buildings	\$118,000	\$111,800	\$114,400	\$115,400	\$109,500	\$112,800	\$112,900	\$116,400	\$124,300	\$104,200
Market Value Total	\$499,500	\$493,250	\$486,650	\$487,650	\$467,950	\$480,450	\$636,550	\$855,500	\$690,250	\$632,150

## Commercial Structures

Building	Year Built	Floor	Square Feet	No. Floors	Total Sq. Ft.	Quality	Condition
OFFICE	1979	1	864	1	864	LOW-COST	AVERAGE
					864		

## Detached Structures

Structure	Year Built	Square Feet	Quality	Condition
SHOP	1979	1760	FAIR	AVERAGE
GEN-PUR-BLDG	1979	1680	FAIR	AVERAGE
MACHINE-SHED	1979	1440	FAIR	POOR
MACHINE-SHED	1979	960	FAIR	POOR

## Land Characteristics

Land Flag	8040	Land Influence(s)	SP-SHAPE
Lot Square Footage	396536		ST-STEEP-TOPO
Lot Acreage	9.1		RS-RESTRICTIONS
Effective Frontage	Not Listed		PS-PART IMPRVD SITE
Effective Depth	Not Listed		
Water Source	Not Listed		
Sewer Source	Not Listed		

## Sales

Sale Date:	08/21/2015	08/21/2015	12/19/2013
Price:		\$750,000	
Excise:	527821	527822	376649
Sale Type:	QUIT CLAIM DEED	STATUTRY WARNTY DEED	QUIT CLAIM DEED
Recording Number:	4461476	4461477	4373408
Seller:		WOOD MICHAEL	WOOD MIKE & KARMON
Buyer:	BLACK LAKE QUARRY LLC	BLACK LAKE QUARRY LLC	WOOD MICHAEL
Multiple Parcel Sale:	Y	Y	N
Sale Date:	05/29/2008	05/29/2008	05/29/2008
Price:	\$1,785,000		
Excise:	505017	505015	505016
Sale Type:			

<b>Recording Number:</b>	SPECIAL WARRANT DEED 4013808	QUIT CLAIM DEED 4013806	QUIT CLAIM DEED 4013807
<b>Seller:</b>	JONES WILLIAM		
<b>Buyer:</b>	WOOD MIKE & KARMON	WOOD MIKE & KARMON	WOOD MIKE & KARMON
<b>Multiple Parcel Sale:</b>	Y	Y	Y
<b>Sale Date:</b>	02/20/2004	02/20/2004	
<b>Price:</b>			
<b>Excise:</b>	321140	321141	
<b>Sale Type:</b>	QUIT CLAIM DEED	QUIT CLAIM DEED	
<b>Recording Number:</b>	3619108	3619109	
<b>Seller:</b>			
<b>Buyer:</b>	FLINTSTONE FUEL INC	FLINTSTONE FUEL INC	
<b>Multiple Parcel Sale:</b>	Y	Y	

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The Assessor's Office maintains property records on approximately 112,000 parcels in Thurston County for tax purposes. Though records are updated regularly, the accuracy and timeliness of published data cannot be guaranteed. Any person or entity that relies on information obtained from this website does so at his or her own risk. Neither Thurston County nor the Assessor will be held liable for damage or losses caused by use of this information. ***All critical information should be independently verified.***

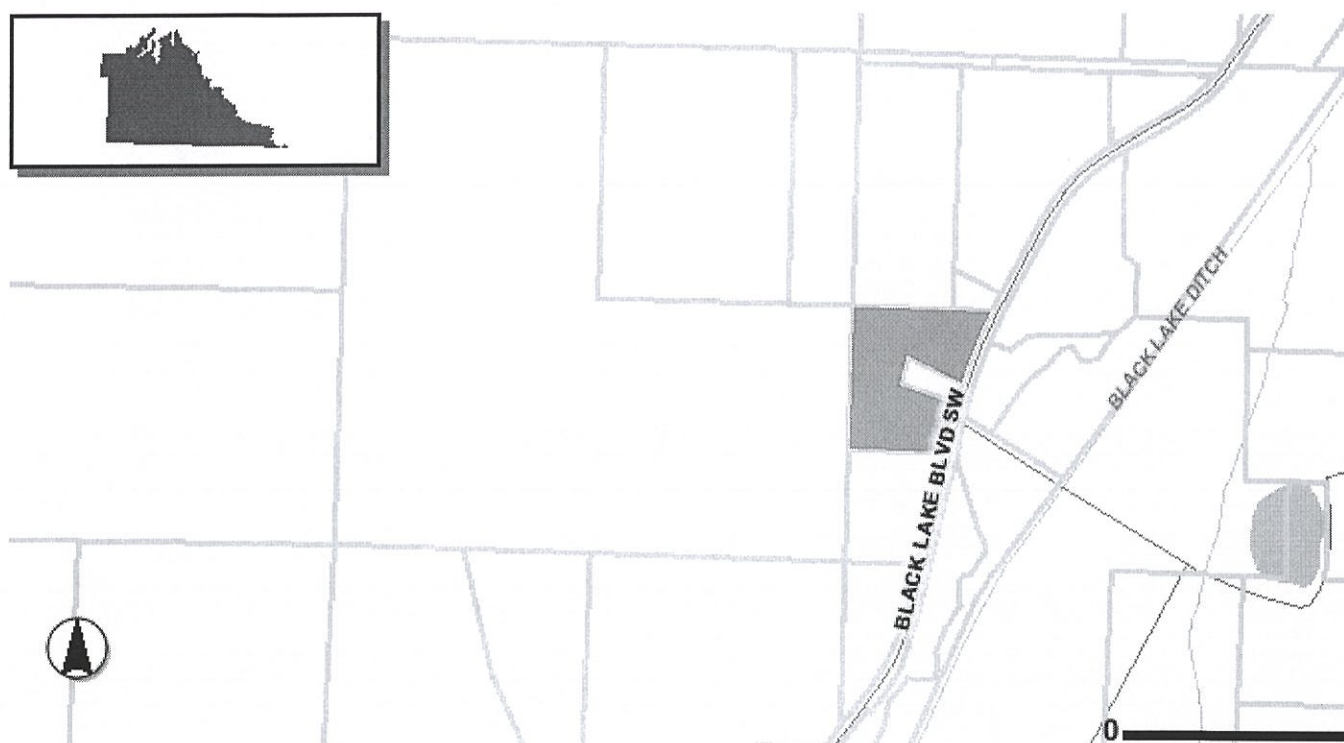
### Office of the Assessor

Steven J. Drew, Assessor

2000 Lakeridge Drive SW - Olympia, WA 98502

Customer Service (360)867-2200 -- Fax (360)867-2201 -- TDD (360)754-2933





## **APPENDIX E**

**WASTE DISPOSAL  
AUTHORIZATION, WASTE  
DISPOSAL RECEIPTS  
PETROLEUM CONTAMINATED  
WATERD DISPOSAL RECEIPTS,  
TANK RECYCLING RECEIPTS,  
AND PERMITS**



**WASTE ACCEPTANCE APPLICATION**  
**CONTAMINATED SOILS, DREDGE SPOILS, AND DEBRIS**

(Complete an application for each waste)

Customer: STEMEN ENVIRONMENTAL INC Customer Number 7639  
Address: 76150 8644 Material Number \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: Lacey, WA 98509  
Contact: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Tip Fee per ton \$20 TON  
General Information for waste disposal:

- 2840(E) BLACK LAKE BLVD. SE, TUMWATER, WA
1. Project Address: \_\_\_\_\_
  2. Charge Account number \_\_\_\_\_
  3. Nominal quantity (ton or CY per day) 300 TONS A DAY -
  4. Source Type "1" thru "4" (see Acceptance Process) 1
  5. Waste current location: 2840 - BLACK LAKE BLVD., TUMWATER, WA
  6. Waste original location: 2840 - C BLACK LAKE BLVD., TUMWATER, WA
  7. Please give a detail description of activities which occurred on or near soils original location which may have impacted the soils.  
LEAKING UNDERGROUND GASOLINE/DIESEL FUEL STORAGE  
TANK SYSTEMS AT COMMERCIAL VEHICLE FUELING FACILITY
  8. Analysis Guidelines for Contaminated Soils, Debris, and Dredge Spoils:

**Waste Oils and Unknown Oils:**

Analyze waste by NWTPH-Gx & NWTPH-Dx to identify contaminants. Additional testing will be required based on these results.

**Gasoline Range Organics (C6 - C12):**

Analyze waste by NWTPH-Gx.

Analyze waste for BTEX compounds with EPA Method 8021 or 8260.

If TPH > 5000 ppm, analyze waste for TCLP metals.

If TPH > 5000 ppm analyze waste by 8240 and 8270.

**Diesel Range Organics (C12 – C24):**

Analyze waste by NWTPH-Dx.

If TPH>5000 ppm, analyze waste for TCLP metals.

If TPH>5000 ppm, analyze waste by EPA Method 8240 and 8270.

**Heavy Oil Organics (> C24):**

Analyze waste for heavy fuel by NWTPH-Dx.

Analyze waste for PCB's by EPA Method 8082 when there is a potential the PCB's may be present.

If TPH>5000 ppm, analyze waste for TCLP metals.

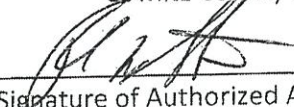
If TPH>5000 ppm, analyze waste by EPA Method 8240 and 8270.

9. List of possible additional analysis. Selected items depend on potential contaminants, available analytical, and generator knowledge of process and/or history:
- ☐ a. Waste samples were collected in accordance with WAC 173-303-110(2).
  - ☐ b. Lab analytical procedures complied with WAC 173-303-110(3).
  - ☐ c. Waste has been analyzed and is non-corrosive per WAC 173-303-090(6) (a) (iii) [pH].
  - ☐ d. Waste has been analyzed and is non-toxic per WAC 173-303-090(8) [TCLP analysis for metals].
  - ☐ e. Waste has been analyzed and is non-toxic per WAC 173-303-090(8) [TCLP analysis for F-list organics].
  - ☐ f. Waste has been analyzed and is non-toxic per WAC 173-303-090(8) [TCLP analysis for acids/base neutrals].
  - ☐ g. Waste has been analyzed and is non-toxic per WAC 173-303-090(8) [TCLP analysis for pesticides and herbicides].
  - ☐ h. Waste has been analyzed and is non-toxic per WAC 173-303-101(5) [Fish bioassay only].
  - ☐ i. Waste has been analyzed and is non-persistent per WAC 173-303-102 [PAH only].
  - ☐ j. Waste has been analyzed and contains less than 2 ppm PCB's per EPA Method 8082.
  - ☒ k. Waste has been analyzed for diesel and/or heavy oil range organics per NWTPH-Dx.
  - ☒ l. Waste has been analyzed for gasoline range organics per NWTPH-Gx.
  - ☒ m. Waste has been analyzed for BTEX per EPA Methods 8021 or 8260.
  - ☐ n. Chain of custody and lab analytical data for required waste analyses is attached.
  - ☐ o. Other



10. Customer certifies that:

- a. The waste sampled and intended for disposal under this certification is neither dangerous nor extremely hazardous waste as determined by WAC 173-303.
- b. The waste has no free liquids per WAC 173-303-110(3) (c) (i).
- c. To the best of its knowledge, there have been no alterations to the waste that would affect the accuracy of the analyses performed above.
- d. There have been no material changes in the character of the waste after the analyses were performed which would render those analyses inaccurate.
- e. The samples analyzed are representative of the waste to be tendered to the Cowlitz County Headquarters Landfill for disposal.

  
Signature of Authorized Agent

8/1/2014  
Date

PAUL W. STEMMER  
Printed Name and Title of Authorized Agent

VICE PRESIDENT / LEAD CONSULTANT

**Cowlitz County Dept of Public Works**  
**Cowlitz County Landfill - Charge Transaction Summary**

From 8/1/2014 to 8/31/2014

**Totals by Date**

Day of Week	Date	Count	Weight	Tip Fee	Spec Fee	Tax Fee	Total Fee
Monday	8/4/2014	4	120.36	\$2,407.20	\$0.00	\$0.00	\$2,407.20
Tuesday	8/5/2014	8	233.84	\$4,676.80	\$0.00	\$0.00	\$4,676.80
Wednesday	8/6/2014	2	54.92	\$1,098.40	\$0.00	\$0.00	\$1,098.40
Thursday	8/7/2014	13	374.23	\$7,484.60	\$0.00	\$0.00	\$7,484.60
Friday	8/8/2014	7	198.29	\$3,965.80	\$0.00	\$0.00	\$3,965.80
Monday	8/11/2014	9	256.59	\$5,131.80	\$0.00	\$0.00	\$5,131.80
Tuesday	8/12/2014	14	390.67	\$7,813.40	\$0.00	\$0.00	\$7,813.40
Wednesday	8/13/2014	10	282.76	\$5,655.20	\$0.00	\$0.00	\$5,655.20
Thursday	8/14/2014	9	247.56	\$4,951.20	\$0.00	\$0.00	\$4,951.20
Friday	8/15/2014	5	137.87	\$2,757.40	\$0.00	\$0.00	\$2,757.40
Monday	8/18/2014	14	380.48	\$7,609.60	\$0.00	\$0.00	\$7,609.60
Tuesday	8/19/2014	5	128.79	\$2,575.80	\$0.00	\$0.00	\$2,575.80
Tuesday	8/26/2014	3	81.58	\$1,631.60	\$0.00	\$0.00	\$1,631.60
Wednesday	8/27/2014	12	329.90	\$6,598.00	\$0.00	\$0.00	\$6,598.00
Thursday	8/28/2014	9	247.67	\$4,953.40	\$0.00	\$0.00	\$4,953.40
Friday	8/29/2014	6	168.39	\$3,367.80	\$0.00	\$0.00	\$3,367.80
<b>Totals</b>		<b>130</b>	<b>3633.90</b>	<b>\$72,678.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$72,678.00</b>

**Totals by Category**

**Transaction Details**

Site	Date	Time	Trans #	Truck	Trlr	Material Type	Weights			Fees		
							Gross	Tare	Net Rate\$	Tip \$	Spec \$	Total \$
LF	8/4/2014	12:36:00 PM	440980	7639	0	57=PCS 4	48.35	19.17	29.18 \$20.00	\$583.60	\$0.00	\$583.60
LF	8/4/2014	12:44:00 PM	440981	7639	0	57=PCS 4	49.95	19.70	30.25 \$20.00	\$605.00	\$0.00	\$605.00
LF	8/4/2014	1:06:00 PM	440989	7639	0	57=PCS 4	49.79	19.77	30.02 \$20.00	\$600.40	\$0.00	\$600.40
LF	8/4/2014	1:07:00 PM	440990	7639	0	57=PCS 4	51.53	20.62	30.91 \$20.00	\$618.20	\$0.00	\$618.20
LF	8/5/2014	12:17:00 PM	441005	7639	0	57=PCS 4	47.54	12.90	34.64 \$20.00	\$692.80	\$0.00	\$692.80
LF	8/5/2014	12:27:00 PM	441006	7639	0	57=PCS 4	48.11	19.17	28.94 \$20.00	\$578.80	\$0.00	\$578.80
LF	8/5/2014	12:27:00 PM	441007	7639	0	57=PCS 4	49.20	19.77	29.43 \$20.00	\$588.60	\$0.00	\$588.60
LF	8/5/2014	12:28:00 PM	441008	7639	0	57=PCS 4	46.62	19.77	26.85 \$20.00	\$537.00	\$0.00	\$537.00
LF	8/5/2014	12:29:00 PM	441009	7639	0	57=PCS 4	48.52	19.70	28.82 \$20.00	\$576.40	\$0.00	\$576.40
LF	8/5/2014	12:30:00 PM	441010	7639	0	57=PCS 4	46.46	19.17	27.29 \$20.00	\$545.80	\$0.00	\$545.80
LF	8/5/2014	12:32:00 PM	441011	7639	0	57=PCS 4	48.02	19.17	28.85 \$20.00	\$577.00	\$0.00	\$577.00
LF	8/5/2014	12:33:00 PM	441012	7639	0	57=PCS 4	49.64	20.62	29.02 \$20.00	\$580.40	\$0.00	\$580.40
LF	8/6/2014	7:05:00 AM	441055	7639	0	57=PCS 4	47.00	19.77	27.23 \$20.00	\$544.60	\$0.00	\$544.60
LF	8/6/2014	7:24:00 AM	441065	7639	0	57=PCS 4	48.31	20.62	27.69 \$20.00	\$553.80	\$0.00	\$553.80
LF	8/7/2014	12:36:00 PM	441116	7639	0	57=PCS 4	48.12	19.18	28.94 \$20.00	\$578.80	\$0.00	\$578.80
LF	8/7/2014	12:37:00 PM	441117	7639	0	57=PCS 4	50.17	22.16	28.01 \$20.00	\$560.20	\$0.00	\$560.20

Account: 7639

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# Cowlitz County Dept of Public Works

## Cowlitz County Landfill - Charge Transaction Summary

From 8/1/2014 to 8/31/2014

### Transaction Details

Transaction Details							Weights			Fees			
Site	Date	Time	Trans #	Truck	Trlr	Material Type	Gross	Tare	Net	Rate\$	Tip \$	Spec \$	Total \$
LF	8/7/2014	12:38:00 PM	441118	7639	0	57=PCS 4	50.50	19.17	31.33	\$20.00	\$626.60	\$0.00	\$626.60
LF	8/7/2014	12:39:00 PM	441119	7639	0	57=PCS 4	47.95	20.62	27.33	\$20.00	\$546.60	\$0.00	\$546.60
LF	8/7/2014	12:40:00 PM	441120	7639	0	57=PCS 4	47.87	19.17	28.70	\$20.00	\$574.00	\$0.00	\$574.00
LF	8/7/2014	12:40:00 PM	441121	7639	0	57=PCS 4	47.60	19.17	28.43	\$20.00	\$568.60	\$0.00	\$568.60
LF	8/7/2014	12:41:00 PM	441122	7639	0	57=PCS 4	49.42	19.01	30.41	\$20.00	\$608.20	\$0.00	\$608.20
LF	8/7/2014	12:42:00 PM	441123	7639	0	57=PCS 4	48.56	19.18	29.38	\$20.00	\$587.60	\$0.00	\$587.60
LF	8/7/2014	12:42:00 PM	441124	7639	0	57=PCS 4	51.89	22.16	29.73	\$20.00	\$594.60	\$0.00	\$594.60
LF	8/7/2014	12:43:00 PM	441125	7639	0	57=PCS 4	48.33	22.16	26.17	\$20.00	\$523.40	\$0.00	\$523.40
LF	8/7/2014	12:44:00 PM	441126	7639	0	57=PCS 4	46.09	19.17	26.92	\$20.00	\$538.40	\$0.00	\$538.40
LF	8/7/2014	12:47:00 PM	441127	7639	0	57=PCS 4	47.82	19.01	28.81	\$20.00	\$576.20	\$0.00	\$576.20
LF	8/7/2014	12:48:00 PM	441128	7639	0	57=PCS 4	49.24	19.17	30.07	\$20.00	\$601.40	\$0.00	\$601.40
LF	8/8/2014	1:49:00 PM	441183	7639	0	57=PCS 4	47.40	19.17	28.23	\$20.00	\$564.60	\$0.00	\$564.60
LF	8/8/2014	1:51:00 PM	441184	7639	0	57=PCS 4	48.22	19.18	29.04	\$20.00	\$580.80	\$0.00	\$580.80
LF	8/8/2014	1:52:00 PM	441185	7639	0	57=PCS 4	49.00	22.16	26.84	\$20.00	\$536.80	\$0.00	\$536.80
LF	8/8/2014	1:53:00 PM	441186	7639	0	57=PCS 4	49.24	19.18	30.06	\$20.00	\$601.20	\$0.00	\$601.20
LF	8/8/2014	1:57:00 PM	441187	7639	0	57=PCS 4	48.83	19.17	29.66	\$20.00	\$593.20	\$0.00	\$593.20
LF	8/8/2014	1:58:00 PM	441188	7639	0	57=PCS 4	50.09	22.16	27.93	\$20.00	\$558.60	\$0.00	\$558.60
LF	8/8/2014	2:00:00 PM	441189	7639	0	57=PCS 4	45.71	19.18	26.53	\$20.00	\$530.60	\$0.00	\$530.60
LF	8/11/2014	1:57:00 PM	441251	7639	0	57=PCS 4	49.03	19.18	29.85	\$20.00	\$597.00	\$0.00	\$597.00
LF	8/11/2014	2:02:00 PM	441252	7639	0	57=PCS 4	47.29	19.17	28.12	\$20.00	\$562.40	\$0.00	\$562.40
LF	8/11/2014	2:02:00 PM	441253	7639	0	57=PCS 4	50.01	19.59	30.42	\$20.00	\$608.40	\$0.00	\$608.40
LF	8/11/2014	2:03:00 PM	441254	7639	0	57=PCS 4	47.12	19.77	27.35	\$20.00	\$547.00	\$0.00	\$547.00
LF	8/11/2014	2:10:00 PM	441255	7639	0	57=PCS 4	49.31	22.16	27.15	\$20.00	\$543.00	\$0.00	\$543.00
LF	8/11/2014	2:11:00 PM	441256	7639	0	57=PCS 4	48.07	19.17	28.90	\$20.00	\$578.00	\$0.00	\$578.00
LF	8/11/2014	2:13:00 PM	441258	7639	0	57=PCS 4	48.79	22.16	26.63	\$20.00	\$532.60	\$0.00	\$532.60
LF	8/11/2014	2:14:00 PM	441259	7639	0	57=PCS 4	47.05	19.18	27.87	\$20.00	\$557.40	\$0.00	\$557.40
LF	8/11/2014	2:15:00 PM	441260	7639	0	57=PCS 4	50.07	19.77	30.30	\$20.00	\$606.00	\$0.00	\$606.00
LF	8/12/2014	2:45:00 PM	441313	7639	0	57=PCS 4	47.33	19.77	27.56	\$20.00	\$551.20	\$0.00	\$551.20
LF	8/12/2014	2:46:00 PM	441314	7639	0	57=PCS 4	48.06	22.16	25.90	\$20.00	\$518.00	\$0.00	\$518.00
LF	8/12/2014	2:46:00 PM	441315	7639	0	57=PCS 4	48.19	19.17	29.02	\$20.00	\$580.40	\$0.00	\$580.40
LF	8/12/2014	2:47:00 PM	441316	7639	0	57=PCS 4	48.72	19.77	28.95	\$20.00	\$579.00	\$0.00	\$579.00
LF	8/12/2014	2:48:00 PM	441317	7639	0	57=PCS 4	47.66	22.16	25.50	\$20.00	\$510.00	\$0.00	\$510.00
LF	8/12/2014	2:49:00 PM	441318	7639	0	57=PCS 4	49.06	19.17	29.89	\$20.00	\$597.80	\$0.00	\$597.80
LF	8/12/2014	2:49:00 PM	441319	7639	0	57=PCS 4	47.36	19.18	28.18	\$20.00	\$563.60	\$0.00	\$563.60
LF	8/12/2014	2:50:00 PM	441320	7639	0	57=PCS 4	47.42	19.77	27.65	\$20.00	\$553.00	\$0.00	\$553.00
LF	8/12/2014	2:50:00 PM	441321	7639	0	57=PCS 4	47.96	22.16	25.80	\$20.00	\$516.00	\$0.00	\$516.00
LF	8/12/2014	2:51:00 PM	441322	7639	0	57=PCS 4	48.60	19.17	29.43	\$20.00	\$588.60	\$0.00	\$588.60
LF	8/12/2014	2:51:00 PM	441323	7639	0	57=PCS 4	47.08	19.18	27.90	\$20.00	\$558.00	\$0.00	\$558.00
LF	8/12/2014	2:52:00 PM	441324	7639	0	57=PCS 4	48.53	19.77	28.76	\$20.00	\$575.20	\$0.00	\$575.20
LF	8/12/2014	2:52:00 PM	441325	7639	0	57=PCS 4	45.73	19.18	26.55	\$20.00	\$531.00	\$0.00	\$531.00
LF	8/12/2014	2:53:00 PM	441326	7639	0	57=PCS 4	48.75	19.17	29.58	\$20.00	\$591.60	\$0.00	\$591.60
LF	8/13/2014	1:27:00 PM	441351	7639	0	57=PCS 4	47.95	19.77	28.18	\$20.00	\$563.60	\$0.00	\$563.60
LF	8/13/2014	1:28:00 PM	441352	7639	0	57=PCS 4	48.31	19.18	29.13	\$20.00	\$582.60	\$0.00	\$582.60
LF	8/13/2014	1:28:00 PM	441353	7639	0	57=PCS 4	49.85	22.16	27.69	\$20.00	\$553.80	\$0.00	\$553.80
LF	8/13/2014	1:29:00 PM	441354	7639	0	57=PCS 4	48.11	19.17	28.94	\$20.00	\$578.80	\$0.00	\$578.80
LF	8/13/2014	1:37:00 PM	441355	7639	0	57=PCS 4	47.35	19.18	28.17	\$20.00	\$563.40	\$0.00	\$563.40
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Account: 7639

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# Cowlitz County Dept of Public Works

## Cowlitz County Landfill - Charge Transaction Summary

From 8/1/2014 to 8/31/2014

### Transaction Details

Site	Date	Time	Trans #	Truck	Trlr	Material Type	Weights		Net	Rate\$	Fees		
							Gross	Tare			Tip \$	Spec \$	Total \$
LF	8/13/2014	2:03:00 PM	441356	7639	0	57=PCS 4	48.33	19.17	29.16	\$20.00	\$583.20	\$0.00	\$583.20
LF	8/13/2014	2:04:00 PM	441357	7639	0	57=PCS 4	48.52	22.16	26.36	\$20.00	\$527.20	\$0.00	\$527.20
LF	8/13/2014	2:06:00 PM	441358	7639	0	57=PCS 4	47.36	19.18	28.18	\$20.00	\$563.60	\$0.00	\$563.60
LF	8/13/2014	2:06:00 PM	441359	7639	0	57=PCS 4	48.41	19.77	28.64	\$20.00	\$572.80	\$0.00	\$572.80
LF	8/13/2014	2:10:00 PM	441360	7639	0	57=PCS 4	47.48	19.17	28.31	\$20.00	\$566.20	\$0.00	\$566.20
LF	8/14/2014	11:17:00 AM	441411	7639	0	57=PCS 4	47.36	19.77	27.59	\$20.00	\$551.80	\$0.00	\$551.80
LF	8/14/2014	11:18:00 AM	441412	7639	0	57=PCS 4	47.59	19.18	28.41	\$20.00	\$568.20	\$0.00	\$568.20
LF	8/14/2014	11:19:00 AM	441413	7639	0	57=PCS 4	48.19	22.16	26.03	\$20.00	\$520.60	\$0.00	\$520.60
LF	8/14/2014	11:19:00 AM	441414	7639	0	57=PCS 4	48.61	22.16	26.45	\$20.00	\$529.00	\$0.00	\$529.00
LF	8/14/2014	11:21:00 AM	441415	7639	0	57=PCS 4	48.23	19.17	29.06	\$20.00	\$581.20	\$0.00	\$581.20
LF	8/14/2014	11:23:00 AM	441416	7639	0	57=PCS 4	48.46	19.77	28.69	\$20.00	\$573.80	\$0.00	\$573.80
LF	8/14/2014	12:05:00 PM	441429	7639	0	57=PCS 4	47.55	20.00	27.55	\$20.00	\$551.00	\$0.00	\$551.00
LF	8/14/2014	1:30:00 PM	441430	7639	0	57=PCS 4	47.74	19.17	28.57	\$20.00	\$571.40	\$0.00	\$571.40
LF	8/14/2014	1:31:00 PM	441431	7639	0	57=PCS 4	47.37	22.16	25.21	\$20.00	\$504.20	\$0.00	\$504.20
LF	8/15/2014	8:58:00 AM	441451	7639	0	57=PCS 4	45.83	20.00	25.83	\$20.00	\$516.60	\$0.00	\$516.60
LF	8/15/2014	8:59:00 AM	441452	7639	0	57=PCS 4	49.02	19.77	29.25	\$20.00	\$585.00	\$0.00	\$585.00
LF	8/15/2014	9:00:00 AM	441453	7639	0	57=PCS 4	48.67	22.16	26.51	\$20.00	\$530.20	\$0.00	\$530.20
LF	8/15/2014	9:00:00 AM	441454	7639	0	57=PCS 4	47.63	19.17	28.46	\$20.00	\$569.20	\$0.00	\$569.20
LF	8/15/2014	9:03:00 AM	441456	7639	0	57=PCS 4	47.59	19.77	27.82	\$20.00	\$556.40	\$0.00	\$556.40
LF	8/18/2014	12:32:00 PM	441459	7639	0	57=PCS 4	46.07	19.77	26.30	\$20.00	\$526.00	\$0.00	\$526.00
LF	8/18/2014	12:33:00 PM	441460	7639	0	57=PCS 4	47.02	20.00	27.02	\$20.00	\$540.40	\$0.00	\$540.40
LF	8/18/2014	12:33:00 PM	441461	7639	0	57=PCS 4	46.29	20.00	26.29	\$20.00	\$525.80	\$0.00	\$525.80
LF	8/18/2014	12:34:00 PM	441462	7639	0	57=PCS 4	47.30	22.16	25.14	\$20.00	\$502.80	\$0.00	\$502.80
LF	8/18/2014	12:34:00 PM	441463	7639	0	57=PCS 4	47.93	19.17	28.76	\$20.00	\$575.20	\$0.00	\$575.20
LF	8/18/2014	12:35:00 PM	441464	7639	0	57=PCS 4	46.56	19.18	27.38	\$20.00	\$547.60	\$0.00	\$547.60
LF	8/18/2014	12:36:00 PM	441465	7639	0	57=PCS 4	46.13	19.77	26.36	\$20.00	\$527.20	\$0.00	\$527.20
LF	8/18/2014	12:36:00 PM	441466	7639	0	57=PCS 4	46.07	19.18	26.89	\$20.00	\$537.80	\$0.00	\$537.80
LF	8/18/2014	12:39:00 PM	441467	7639	0	57=PCS 4	49.42	22.16	27.26	\$20.00	\$545.20	\$0.00	\$545.20
LF	8/18/2014	12:40:00 PM	441468	7639	0	57=PCS 4	47.28	19.17	28.11	\$20.00	\$562.20	\$0.00	\$562.20
LF	8/18/2014	12:44:00 PM	441469	7639	0	57=PCS 4	49.86	20.00	29.86	\$20.00	\$597.20	\$0.00	\$597.20
LF	8/18/2014	12:45:00 PM	441470	7639	0	57=PCS 4	47.86	19.77	28.09	\$20.00	\$561.80	\$0.00	\$561.80
LF	8/18/2014	12:45:00 PM	441471	7639	0	57=PCS 4	47.40	22.16	25.24	\$20.00	\$504.80	\$0.00	\$504.80
LF	8/18/2014	12:46:00 PM	441472	7639	0	57=PCS 4	46.95	19.17	27.78	\$20.00	\$555.60	\$0.00	\$555.60
LF	8/19/2014	7:24:00 AM	441515	7639	0	57=PCS 4	45.17	19.18	25.99	\$20.00	\$519.80	\$0.00	\$519.80
LF	8/19/2014	7:27:00 AM	441516	7639	0	57=PCS 4	46.08	19.77	26.31	\$20.00	\$526.20	\$0.00	\$526.20
LF	8/19/2014	7:27:00 AM	441517	7639	0	57=PCS 4	45.22	22.16	23.06	\$20.00	\$461.20	\$0.00	\$461.20
LF	8/19/2014	7:28:00 AM	441518	7639	0	57=PCS 4	46.64	19.17	27.47	\$20.00	\$549.40	\$0.00	\$549.40
LF	8/19/2014	8:25:00 AM	441523	7639	0	57=PCS 4	45.96	20.00	25.96	\$20.00	\$519.20	\$0.00	\$519.20
LF	8/26/2014	12:34:00 PM	441754	7639	0	57=PCS 4	48.64	19.17	29.47	\$20.00	\$589.40	\$0.00	\$589.40
LF	8/26/2014	12:40:00 PM	441755	7639	0	57=PCS 4	46.58	19.77	26.81	\$20.00	\$536.20	\$0.00	\$536.20
LF	8/26/2014	12:41:00 PM	441756	7639	0	57=PCS 4	47.46	22.16	25.30	\$20.00	\$506.00	\$0.00	\$506.00
LF	8/27/2014	1:50:00 PM	441798	7639	0	57=PCS 4	48.35	19.77	28.58	\$20.00	\$571.60	\$0.00	\$571.60
LF	8/27/2014	1:55:00 PM	441799	7639	0	57=PCS 4	47.72	22.16	25.56	\$20.00	\$511.20	\$0.00	\$511.20
LF	8/27/2014	1:57:00 PM	441800	7639	0	57=PCS 4	47.34	19.17	28.17	\$20.00	\$563.40	\$0.00	\$563.40
LF	8/27/2014	1:58:00 PM	441801	7639	0	57=PCS 4	47.19	19.17	28.02	\$20.00	\$560.40	\$0.00	\$560.40

Account: 7639

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**Cowlitz County Dept of Public Works**  
**Cowlitz County Landfill - Charge Transaction Summary**

From 8/1/2014 to 8/31/2014

**Transaction Details**

Site	Date	Time	Trans #	Truck	Trlr	Material Type	Weights		Net	Rate\$	Fees		
							Gross	Tare			Tip \$	Spec \$	Total \$
LF	8/27/2014	2:00:00 PM	441802	7639	0	57=PCS 4	47.54	19.77	27.77	\$20.00	\$555.40	\$0.00	\$555.40
LF	8/27/2014	2:00:00 PM	441803	7639	0	57=PCS 4	49.93	22.16	27.77	\$20.00	\$555.40	\$0.00	\$555.40
LF	8/27/2014	2:04:00 PM	441804	7639	0	57=PCS 4	49.24	19.77	29.47	\$20.00	\$589.40	\$0.00	\$589.40
LF	8/27/2014	2:04:00 PM	441805	7639	0	57=PCS 4	48.08	22.16	25.92	\$20.00	\$518.40	\$0.00	\$518.40
LF	8/27/2014	2:05:00 PM	441806	7639	0	57=PCS 4	48.08	19.17	28.91	\$20.00	\$578.20	\$0.00	\$578.20
LF	8/27/2014	2:06:00 PM	441807	7639	0	57=PCS 4	47.24	19.77	27.47	\$20.00	\$549.40	\$0.00	\$549.40
LF	8/27/2014	2:07:00 PM	441808	7639	0	57=PCS 4	47.21	22.16	25.05	\$20.00	\$501.00	\$0.00	\$501.00
LF	8/27/2014	2:08:00 PM	441809	7639	0	57=PCS 4	46.38	19.17	27.21	\$20.00	\$544.20	\$0.00	\$544.20
LF	8/28/2014	8:49:00 AM	441832	7639	0	57=PCS 4	46.70	22.16	24.54	\$20.00	\$490.80	\$0.00	\$490.80
LF	8/28/2014	8:58:00 AM	441833	7639	0	57=PCS 4	48.53	19.77	28.76	\$20.00	\$575.20	\$0.00	\$575.20
LF	8/28/2014	8:58:00 AM	441834	7639	0	57=PCS 4	47.34	19.17	28.17	\$20.00	\$563.40	\$0.00	\$563.40
LF	8/28/2014	1:49:00 PM	441850	7639	0	57=PCS 4	47.78	19.77	28.01	\$20.00	\$560.20	\$0.00	\$560.20
LF	8/28/2014	1:51:00 PM	441851	7639	0	57=PCS 4	48.97	19.17	29.80	\$20.00	\$596.00	\$0.00	\$596.00
LF	8/28/2014	1:52:00 PM	441852	7639	0	57=PCS 4	46.92	22.16	24.76	\$20.00	\$495.20	\$0.00	\$495.20
LF	8/28/2014	1:53:00 PM	441853	7639	0	57=PCS 4	48.37	19.77	28.60	\$20.00	\$572.00	\$0.00	\$572.00
LF	8/28/2014	1:54:00 PM	441854	7639	0	57=PCS 4	47.74	19.17	28.57	\$20.00	\$571.40	\$0.00	\$571.40
LF	8/28/2014	2:20:00 PM	441860	7639	0	57=PCS 4	48.62	22.16	26.46	\$20.00	\$529.20	\$0.00	\$529.20
LF	8/29/2014	12:16:00 PM	441905	7639	0	57=PCS 4	49.11	19.17	29.94	\$20.00	\$598.80	\$0.00	\$598.80
LF	8/29/2014	12:34:00 PM	441906	7639	0	57=PCS 4	48.52	19.17	29.35	\$20.00	\$587.00	\$0.00	\$587.00
LF	8/29/2014	12:40:00 PM	441907	7639	0	57=PCS 4	45.90	22.16	23.74	\$20.00	\$474.80	\$0.00	\$474.80
LF	8/29/2014	12:41:00 PM	441908	7639	0	57=PCS 4	50.52	19.77	30.75	\$20.00	\$615.00	\$0.00	\$615.00
LF	8/29/2014	12:42:00 PM	441909	7639	0	57=PCS 4	47.00	19.77	27.23	\$20.00	\$544.60	\$0.00	\$544.60
LF	8/29/2014	12:42:00 PM	441910	7639	0	57=PCS 4	49.54	22.16	27.38	\$20.00	\$547.60	\$0.00	\$547.60

Cowlitz County Dept of Public Works  
**Cowlitz County Landfill - Charge Transaction Summary**

From 2/1/2015 to 2/28/2015

**Totals by Date**

Day of Week	Date	Count	Weight	Tip Fee	Spec Fee	Tax Fee	Total Fee
Wednesday	2/11/2015	1	31.91	\$638.20	\$0.00	\$0.00	\$638.20
<b>Totals</b>		1	31.91	\$638.20	\$0.00	\$0.00	\$638.20

**Totals by Category**

**Transaction Details**

Site	Date	Time	Trans #	Truck	Trlr	Material Type	Weights		Net	Rate\$	Fees		
							Gross	Tare			Tip \$	Spec \$	Total \$
LF	2/11/2015	2:11:00 PM	448619	7639	0	57=PCS 4	54.07	22.16	31.91	\$20.00	\$638.20	\$0.00	\$638.20



**Cowlitz County Dept of Public Works**  
**Cowlitz County Landfill - Charge Transaction Summary**

From 7/1/2015 to 7/31/2015

**Totals by Date**

Day of Week	Date	Count	Weight	Tip Fee	Spec Fee	Tax Fee	Total Fee
Wednesday	7/8/2015	2	54.62	\$1,092.40	\$0.00	\$0.00	\$1,092.40
Tuesday	7/28/2015	2	43.27	\$865.40	\$0.00	\$0.00	\$865.40
<b>Totals</b>		<b>4</b>	<b>97.89</b>	<b>\$1,957.80</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$1,957.80</b>

**Totals by Category**

**Transaction Details**

<u>Transaction Details</u>							----- Weights -----				----- Fees -----		
Site	Date	Time	Trans #	Truck	Trlr	Material Type	Gross	Tare	Net	Rate\$	Tip \$	Spec \$	Total \$
LF	7/8/2015	12:19:00 PM	452945	7639	0	57=PCS 4	45.21	19.06	26.15	\$20.00	\$523.00	\$0.00	\$523.00
LF	7/8/2015	12:54:00 PM	452949	7639	0	57=PCS 4	47.98	19.51	28.47	\$20.00	\$569.40	\$0.00	\$569.40
LF	7/28/2015	7:55:00 AM	453348	7639	0	57=PCS 4	44.64	19.36	25.28	\$20.00	\$505.60	\$0.00	\$505.60
LF	7/28/2015	8:18:00 AM	453349	7639	0	57=PCS 4	36.75	18.76	17.99	\$20.00	\$359.80	\$0.00	\$359.80

# Arcom Oil

American Rerefining Company  
(253) 535-9322  
WAD-988 515 334



Used Oil & Spent Antifreeze  
Transport Specialists

SERVICE INVOICE # **84619**

Customer Stromberg Phone \_\_\_\_\_ Date 8-8-14  
Street PO Box 3684 City Tacoma  
Bill To \_\_\_\_\_ Account # 90076-1

B of L # 104846  
PO # \_\_\_\_\_ Service Ordered By: \_\_\_\_\_

QTY.		Amount	Summary of Charges
<u>25</u>	<u>gals. oil</u>		MATERIAL
	<u>ext. oil</u>		SERVICE CALL OR PICK-UP-DELIVERY
			LABOR OR FLAT RATE
	Clor-D-TectQ4000Kit Results: ppm		TOTAL
	F.T. pass / fail		I certify as the generator of this used oil that it does not contain detectable levels of PCB's or 1000 PPM chlorinated solvents.
			Signature _____
			Drivers Name _____
	MATERIAL TOTAL		

MAIL PAYMENTS TO: **Arcom Oil**  
P.O. Box 12042  
Tacoma, WA 98412-0042

white-office

canary-office

pink-customer



# INVOICE

ACCOUNTING@MARINEVACUUM.COM

Date	Invoice #
7/29/2014	51693

Bill To
CASH

Ship To

PUMP AND WASH AS DIRECTED  
2840 BLACK LAKE C BLVD SW, TUMWATER

P.O. No.	Terms
	Due on receipt

[illegible]

57039



# **PRS Group, Inc.**

## **ENTRY LOG FOR NON-HAZARDOUS ITEMS**

3003 Taylor Way

Tacoma, WA 98421

Phone: (253)383-4175 Fax: (253)383-4531

prs@prsplant.net

Date: 7-29-2014	Carrier: Ccs	Vehicle #: 159
Drivers Signature *:	Plant Employee: Zach	Time: 1853

Generator Name	Profile #	Work Order, BOL, Or Manifest #	% Water: 100%		Ph: 7		Flash>140 <input checked="" type="checkbox"/> Other Value (Fuel Only):					
			% Solids: 0%		Tank # Or Area: 4B		Chlor Test: NA <input checked="" type="checkbox"/> Chlor Value <1000: <input type="checkbox"/>					
			Used Oil	Spent Antifreeze	Used Oil Filters	Off Spec. Fuel	Oily Waste Water	Oily Solids	PCS	Absorbent	Empty Drums	Other
Stemen Environmental	Pending						5900g					oc

\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.



57046



**PRS Group, Inc.**  
**ENTRY LOG FOR NON-HAZARDOUS ITEMS**

3003 Taylor Way  
 Tacoma, WA 98421  
 Phone: (253)383-4175 Fax: (253)383-4531  
 prs@prsplant.net

Date: 7-30-2014	Carrier: Ccs	Vehicle #: 308
Drivers Signature *:	Plant Employee: Josh	Time: 10:10

Generator Name	Profile #	Work Order, BOL, Or Manifest #	% Water: 99%		Ph: 7		Flash>140 <input checked="" type="checkbox"/> Other Value (Fuel Only):					
			% Solids: 0%		Tank # Or Area: 5B		Chlor Test: NA <input checked="" type="checkbox"/> Chlor Value <1000: <input type="checkbox"/>					
			Used Oil	Spent Antifreeze	Used Oil Filters	Off Spec. Fuel	Oily Waste Water	Oily Solids	PCS	Absorbent	Empty Drums	Other
Stemen	Pending						1404g					

\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.



57102



**PRS Group, Inc.**  
**ENTRY LOG FOR NON-HAZARDOUS ITEMS**

3003 Taylor Way  
 Tacoma, WA 98421  
 Phone: (253)383-4175 Fax: (253)383-4531  
 prs@prsplant.net

Date: 8-4-2014	Carrier: Ccs	Vehicle #: 308
Drivers Signature *: <i>[Signature]</i>	Plant Employee: Zach	Time: 1532

			% Water: 100%		Ph: 8		Flash>140 <input checked="" type="checkbox"/> Other Value (Fuel Only):					
			% Solids: 0%		Tank # Or Area: 4B		Chlor Test: NA <input checked="" type="checkbox"/> Chlor Value <1000: <input type="checkbox"/>					
Generator Name	Profile #	Work Order, BOL, Or Manifest #	Used Oil	Spent Antifreeze	Used Oil Filters	Off Spec. Fuel	Oily Waste Water	Oily Solids	PCS	Absorbent	Empty Drums	Other
Stemen Environmental	PENDING	6046					125G					OC

\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility.  
 Please verify the information for accuracy prior to signing.



57373



**PRs Group, Inc.**  
**ENTRY LOG FOR NON-HAZARDOUS ITEMS**

3003 Taylor Way  
 Tacoma, WA 98421  
 Phone: (253)383-4175 Fax: (253)383-4531  
 prs@prsplant.net

Date: 8-28-2014	Carrier: Ccs	Vehicle #: 160
Drivers Signature *:	Plant Employee: Zach	Time: 1513

Generator Name	Profile #	Work Order, BOL, Or Manifest #	% Water: 99%		Ph: 7.8		Flash>140 <input checked="" type="checkbox"/> Other Value (Fuel Only):					
			% Solids: 1%		Tank # Or Area: 2B		Chlor Test: NA <input checked="" type="checkbox"/> Chlor Value <1000: <input type="checkbox"/>					
			Used Oil	Spent Antifreeze	Used Oil Filters	Off Spec. Fuel	Oily Waste Water	Oily Solids	PCS	Absorbent	Empty Drums	Other
Siemens Environmental	4395-b	Flintstone					6800g					oc


\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.



## ENTRY LOG FOR NON-HAZARDOUS ITEMS

Tacoma, WA 98421

prs@prsplant.net

<b>Date:</b> 8-28-2014	<b>Carrier:</b> Ccs	<b>Vehicle #:</b> 308
<b>Drivers Signature *:</b> 	<b>Plant Employee:</b> Zach	<b>Time:</b> 1504

[illegible]

\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.



57384



# **PRs Group, Inc.**

## **ENTRY LOG FOR NON-HAZARDOUS ITEMS**

3003 Taylor Way

Tacoma, WA 98421

Phone: (253)383-4175 Fax: (253)383-4531

prs@prsplant.net

Date: 8-29-2014	Carrier: Ccs	Vehicle #: 160
Drivers Signature *:	Plant Employee: Zach	Time: 1444

Generator Name	Profile #	Work Order, BOL, Or Manifest #	% Water: 99%		Ph: 7.8		Flash>140 <input checked="" type="checkbox"/> Other Value (Fuel Only):					
			% Solids: 1%		Tank # Or Area: 2B		Chlor Test: NA <input checked="" type="checkbox"/> Chlor Value <1000: <input type="checkbox"/>					
			Used Oil	Spent Antifreeze	Used Oil Filters	Off Spec. Fuel	Oil Waste Water	Oily Solids	PCS	Absorbent	Empty Drums	Other
Siemens Environmental	4395-B	Flintstone						6800G				OC

\* The information contained in this entry log describes your waste as specified in the specific waste profile approved in to the PRS facility. Please verify the information for accuracy prior to signing.

TANK  
GAS

ID 0.1

GROSS 41320 lb INBOUND

08/07/2014 07:56AM

ID 0.1

GROSS 41320 lb RECALLED

TARE 32580 lb

NET 8740 lb

08/07/2014 07:59AM

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_

GAS  
TANK

ID 0.1

GROSS 39520 lb INBOUND

08/07/2014 12:02PM

ID 0.1

GROSS 39520 lb RECALLED

TARE 32500 lb

NET 7020 lb

08/07/2014 12:06PM

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_

GAS  
TANK

ID 0.2

GROSS 42380 lb INBOUND

08/07/2014 09:15AM

ID 0.2

GROSS 42380 lb RECALLED

TARE 32560 lb

NET 9820 lb

08/07/2014 09:19AM

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_

GAS  
TANK

ID 0.1

GROSS 41920 lb INBOUND

08/07/2014 10:11AM

- 32500

9420

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_



GAS  
TANK

ID 0.1

GROSS 33320 lb INBOUND

07/28/2014 01:55PM

ID 0.1

GROSS 33320 lb RECALLED

TARE 26620 lb

NET 6700 lb

07/28/2014 02:03PM

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_

GAS  
TANK

ID 0.1

GROSS 30760 lb INBOUND

07/28/2014 12:58PM

ID 0.1

GROSS 30760 lb RECALLED

TARE 26620 lb

NET 4140 lb

07/28/2014 01:01PM

Driver On ☐

Driver Off ☐

Customer Signature: \_\_\_\_\_

# PERMIT

## INSPECTION RECORD



COMMUNITY DEVELOPMENT INSPECTION REQUEST LINE: (360) 754-4189  
OR  
SCHEDULE ON-LINE AT [WWW.CI.TUMWATER.WA.US](http://WWW.CI.TUMWATER.WA.US)

PERMIT NO. **TUM-14-0476** ISSUE DATE July 09, 2014  
CUSTOMER #: **00000410** \*EXPIRATION DATE January 05, 2015  
ACTIVITY DEMOLITION AND REMOVAL OF METAL CANOPY OVER FUEL DISPENSING ISLAND. \*POSTED 06-23-2014\*  
ADDRESS 2840 BLACK LAKE BLVD SW SUITE C  
CONTRACTOR STEMEN ENVIRONMENTAL, INC.  
OWNER MICHAEL WOOD LENDER NOT PROVIDED

### REQUIRED INSPECTIONS

INSP #	DESCRIPTION	DATE	INIT	INSP #	DESCRIPTION	DATE	INIT
0195	STRUCTURE DEMOLITION	12.18.14	JA				
0199	BUILDING FINAL	12.17.14	PT				
0221	WATER SERVICE DISCONNECT	N/A	—				
0227	SEWER CAPPED OFF	N/A	—				
0299	PLUMBING FINAL	N/A	—				

\*This permit shall expire by limitation and become null and void if the building or work authorized by this permit is not commenced within 180 days from the issue date or if the building or work is suspended or abandoned at anytime or if no required inspections have been approved after the work is commenced for a period of 180 days. See TMC 15.04.020 for requirements on permit extensions and renewals.

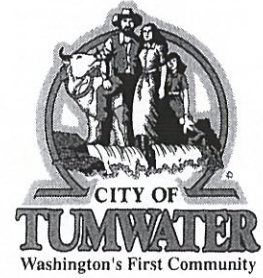
On New Construction a Certificate of Occupancy is required.

When requesting inspections, please give your NAME, PROJECT ADDRESS, PERMIT NUMBER, and TYPE OF INSPECTION desired.  
NOTICE: THIS CARD MUST BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION



# PERMIT

## INSPECTION RECORD



COMMUNITY DEVELOPMENT INSPECTION REQUEST LINE: (360) 754-4189  
OR  
SCHEDULE ON-LINE AT [WWW.CI.TUMWATER.WA.US](http://WWW.CI.TUMWATER.WA.US)

PERMIT NO. **TUM-14-0475** ISSUE DATE July 09, 2014  
CUSTOMER #: **00000410** \*EXPIRATION DATE January 05, 2015  
ACTIVITY REMOVAL OF 6 UNDERGROUND FUEL STORAGE TANKS AND ASSOCIATED UNDERGROUND SUPPLY LINES -  
TWO 10,000 GALLON DIESEL FUEL TANKS, TWO 10,000 GALLON UNLEADED GAS TANKS, TWO 8,000 GALLON  
LUBE OIL TANKS.  
ADDRESS 2840 BLACK LAKE BLVD SW SUITE C  
CONTRACTOR STEMEN ENVIRONMENTAL, INC.  
OWNER MICHAEL WOOD LENDER NOT PROVIDED

### REQUIRED INSPECTIONS

INSP #	DESCRIPTION	DATE	INIT	INSP #	DESCRIPTION	DATE	INIT
0699	FIRE FINAL						

\*This permit shall expire by limitation and become null and void if the building or work authorized by this permit is not commenced within 180 days from the issue date or if the building or work is suspended or abandoned at anytime or if no required inspections have been approved after the work is commenced for a period of 180 days. See TMC 15.04.020 for requirements on permit extensions and renewals.

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