STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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Electronic Copy

September 3, 2015

Ms. Tanya Girouard
Progress Rail Services Corporation
4012 SR 509 South Frontage Road
Tacoma, WA 98421

Re: Further Action at the following Site:

- **Site Name:** Coast Engine & Equipment Corp (aka Progress Rail)
- **Site Address:** 4012 SR 509 South Frontage Road, Tacoma, Pierce County
- **Facility/Site No.:** 26693246
- **Cleanup Site ID No.:** 4267
- **VCP Project No.:** SW1474

Dear Ms. Girouard:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Coast Engine & Equipment Corp facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

Yes. Ecology has determined that further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Petroleum hydrocarbons and related constituents into the Soil and Groundwater.
-

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note the parcel(s) of real property associated with this Site are also located within the projected boundaries of the Tacoma Smelter Plume (Facility/Site No. 89267963). At this time, we have no information that those parcel(s) are actually affected; however, Ecology recommends that any soil samples collected from the Site be analyzed for lead and arsenic to determine whether the Site has been impacted. This opinion does not apply to any contamination associated with the Tacoma Smelter Plume.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Annual Groundwater Monitoring Report: 2014, Progress Rail Spill Incident #12-0773, 4012 SR 509 South Frontage Road, prepared by Terracon Consultants Inc. (Terracon), dated January 15, 2015.

2. Groundwater Monitoring Well Installation and Sampling, Progress Rail Spill Incident #12-0773,4012 SR 509 South Frontage Road, prepared by Terracon, dated April 15, 2014.

3. Limited Soil Sampling Summary Letter, Progress Rail Spill Incident #12-0773, 4012 SR 509South Frontage Road, prepared by Terracon, dated April 8, 2014.

4. Supplemental Investigation & Remedial Excavation, Progress Rail Spill Incident #12-0773, 4012SR 509 South Frontage Road, prepared by Terracon, dated March 11, 2014.

5. Draft Limited Site Investigation, Progress Rail, Tacoma, Pierce County, WA, prepared by Terracon, dated January 28, 2015.

6. Summary of Limited Investigation Activity, Progress Rail Services, Tacoma, WA, prepared by Terracon, dated July 17, 2013.

7. Soil Cleanup Activities at the Progress Rail Services Tacoma, Washington facility, prepared by Panhandle Geotechnical & Environmental, dated May 31, 2012.

8. Technical Memorandum, Soil Remediation Report for the Former CEECO Site, Tacoma, WA, prepared by Dalton, Olmsted & Fuglevand, Inc., dated December 29, 2009

9. Supplemental Phase II Environmental Site Assessment (ESA), Coast Engine and Equipment Corporation, 4012 East West Road, Tacoma, WA, prepared by AGRA Earth and Environmental, dated February 11, 1998.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The Site is located at 4012 SR 509 South Frontage Road in Tacoma, Washington (Pierce County Parcel No. 2001867000), which is located on a larger parent tract of land owned by the Port of Tacoma (Pierce County Parcel No. 0320021002) and leased by Progress Rail Services.

In January 1998, a Phase II ESA indicated concentrations of total petroleum hydrocarbons in shallow soil (< 1 foot) above applicable cleanup levels along the northeast side of the waste oil and sludge area, and concentrations of metals (arsenic, cadmium, and lead) above cleanup levels in shallow soil along the west side of the engine repair area.

In October 2009, pre-remediation surficial soil samples were collected to identify areas that require excavation and removal of contaminated soils. The areas remediated and soil amount excavated included: approximately 8 cubic yards (yd^3) of soil from the area west of the engine machine shop; approximately 4 yd^3 of soil from southwest of the locomotive shop; approximately 10 yd^3 of soil south of the paint shop building; and approximately 15 yd^3 from a 110 foot section of rail line located in the northeast portion of the property.

Confirmation soil samples for the rail line excavation were below laboratory detection levels for the constituents of concern (COCs). No confirmation soil samples were collected at the other three excavations because preliminary soil samples indicated concentrations below the applicable cleanup levels. In November 2009, approximately 55 tons of soil was transported to the Land Recovery Inc. facility in Puyallup, WA.

In July 2011 and March 2012, four areas where there was visible indications of surficial contamination were excavated including: the south side of the waste management area; south side of the engine wash pad; area on the north side of the engine wash pad; and an area between the railroad tracks in the northeast portion of the property. A total of 15 yd^3 of soil was transferred to the Waste Management Columbia Ridge Landfill in Arlington, WA. Final confirmation soil samples collected at the four areas were below applicable cleanup levels for all COCs.

In March 2012, there was a release of diesel from an auxiliary locomotive fuel tank that resulted in soil contamination between the locomotive shop and the locomotive wash pad. Following the spill, an area approximately 10 feet by 50 feet was excavated to remove accessible impacted soils.

On March 7, 2012, four soil borings (DP-1 through DP-4) were advanced to the west, east, north of the wash pad, and south of the shop to evaluate the impacts to the soil and shallow groundwater. Groundwater samples were collected on May 22, 2012.

Analytical results for the March 2012 soil samples collected during the installation of the soil borings indicated concentrations of diesel-range petroleum (TPH-D) above the MTCA Method A Cleanup Level (CULs) in the sample collected along the east end of the impacted area. Analytical results for the May 2012 groundwater samples collected at each soil boring indicated concentrations of TPH-D and oil-range petroleum hydrocarbons (TPH-O) above the MTCA Method A CULs.

In January 2013, nine soil borings (B-1 through B-9) were advanced in the vicinity of the fuel spill to further delineate the lateral and vertical extents of the impacts from the spill.

A total of ten soil samples and seven groundwater samples were collected for laboratory analysis.

Analytical results for the January 2013 soil samples were all below laboratory detection limits for TPH-D and TPH-O. Groundwater samples collected from soil borings B-5 and B-7 had concentrations of TPH-D and TPH-O above the MTCA Method A CULs.

On August 3, 2013 two additional soil borings (B-10 and B-11) were installed and completed as permanent groundwater monitoring wells (MW-1 and MW-2). Analytical results for soil samples collected during the installation of the two soil borings were below laboratory detection levels for TPH-D and TPH-O.

On February 11, 2014 two additional soil borings (B-12 and B-13) were installed and completed as permanent groundwater monitoring wells (MW-3 and MW-4). Analytical results for soil samples collected during the installation of the two soil borings were below laboratory detection levels for TPH-D and TPH-O.

On February 18, 2014, a vehicle struck a rail car fuel tank located on the northwest portion of the property resulting in a release of approximately 480 gallons of diesel fuel. During the initial response, a vactor truck removed approximately 2 tons of material comprised of diesel, water, and diesel-impacted soil. An additional 23 tons of diesel-impacted soil was excavated from an area measuring approximately 20 feet by 80 feet from the railroad tracks, north to the northern property boundary. All the material removed by the vactor truck and subsequent excavation was transported and disposed of at the PRS Group Inc. facility in Tacoma, WA.

Between August 2013 and November 2014, groundwater samples were collected on a quarterly basis from monitoring wells MW-1 through MW-4. Analytical results showed that all four wells for four consecutive quarters were below MTCA Method A CULs for TPH-D and TPH-O with the exception of MW-4. Analytical results for samples collected during February and May 2014 from MW-4 exceeded the MTCA Method A CUL.

Additionally, analytical results for benzene, toluene, ethylbenzene, and xylene (BTEX) naphthalenes, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were all below laboratory detection levels for sample dates August 14, 2014 and November 13, 2014.

Based on the information provided, Ecology has the following comments:

1. Based on the groundwater concentrations of TPH-O at soil boring locations B-4, B-5, and B-7, and groundwater monitoring well MW-4, more characterization is required to determine the source of the elevated concentrations in this area of the Site.

2. The groundwater sample results were flagged by the laboratory as not matching the pattern of the diesel standard. The NWTPH-HCID method is recommended for use in determining the petroleum products within a soil or water sample when the petroleum products are unknown and/or when multiple types of petroleum products are suspected to be present. If the sample result cannot be reasonably matched to a particular product, a Method B cleanup level should be established to determine compliance under MTCA. Please refer to Ecology's Implementation Memorandum No. 4, *Determining Compliance with Method A Cleanup Levels for Diesel and Heavy Oil*, dated June 2004, for more information regarding the use of the NWTPH-HCID Method. This Memorandum can be found at: https://fortress.wa.gov/ecy/publications/summarypages/0409086.html.

3. Any new groundwater monitoring wells installed at the Site should be constructed so that the screen interval straddles the groundwater table. This ensures that groundwater samples are more representative for detecting light non-aqueous phase liquid.

4. Please provide a work plan for additional characterization activities at the Site to ensure that Ecology can make recommendations, if necessary.

5. A Terrestrial Ecological Evaluation (TEE) needs to be completed for the Site. Please fill out the form on our website and submit it to Ecology (along with any supporting documentation, as appropriate) for review. The form can be found at: http://www.ecy.wa.gov/biblio/ecy090300.html.

6. In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit

all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site do not meet the substantive requirements of MTCA.

MTCA Method A CULs for unrestricted land use were used at the Site for soil and groundwater. The MTCA Method A CUL for TPH-D and TPH-O is 500 micrograms per liter (µg/L).

Standard points of compliance were used for the Site. The point of compliance for protection of groundwater should be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance should be established in the soils throughout the Site from the ground surface to 15 feet below ground surface (bgs). In addition, the point of compliance for the groundwater should be established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.
Additional data are required as noted in Section No. 1 to define the extent of contamination. As a result, points of compliance have not been fully established.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site does not meet the substantive requirements of MTCA.

Cleanup actions at the Site to date have included the excavation and off Site disposal of diesel and oil contaminated water and soil, and the application of a remedial amendment (ORC Advanced®) prior to backfilling the open excavation.

A final cleanup action cannot be selected for the Site since the extent of contamination has not been fully defined.

4. Cleanup.

Ecology has determined the cleanup you performed does not meet the cleanup standards established for the Site. As noted in Section No. 1, additional data are required to define the extent of contamination. Cleanup work performed to date at the Site has consisted of the following:

- In October 2009, approximately 37 yd^3 or 55 tons of soil was excavated and removed from four areas at the Site. The excavated soil was transported and disposed of at the Land Recovery Inc. facility in Puyallup, WA.
- In July 2011 and March 2012, approximately 15 yd^3 or 20 tons of soil was excavated from four areas where there was visual indications of surficial soil contamination.
- In March 2012, following a spill of diesel fuel, an unknown amount of impacted soil was excavated from an area approximately 10 feet by 50 feet. Following the excavation and removal of contaminated soil, an enhanced bio-remediation agent (Advanced ORC-A®) was added to the open excavation prior to backfilling with clean soil.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up the Site under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (360) 407-6265 or e-mail at john.rapp@ecy.wa.gov.

Sincerely,

John F Rapp, LHG.
SWRO Toxics Cleanup Program

JFR: knf

Enclosures: A – Description and Diagrams of the Site

By certified mail: 91710821333939704186 58

cc: Mr. Michael Noll, Terracon
Mr. Scott Hooton, Port of Tacoma
Ms. Sharon Bell, Tacoma-Pierce County Health Department
Ms. Richelle Perez, Ecology
Mr. Steve Teel, Ecology
Ms. Delores Mitchell, Ecology

Enclosure A

Description and Diagrams of the Site

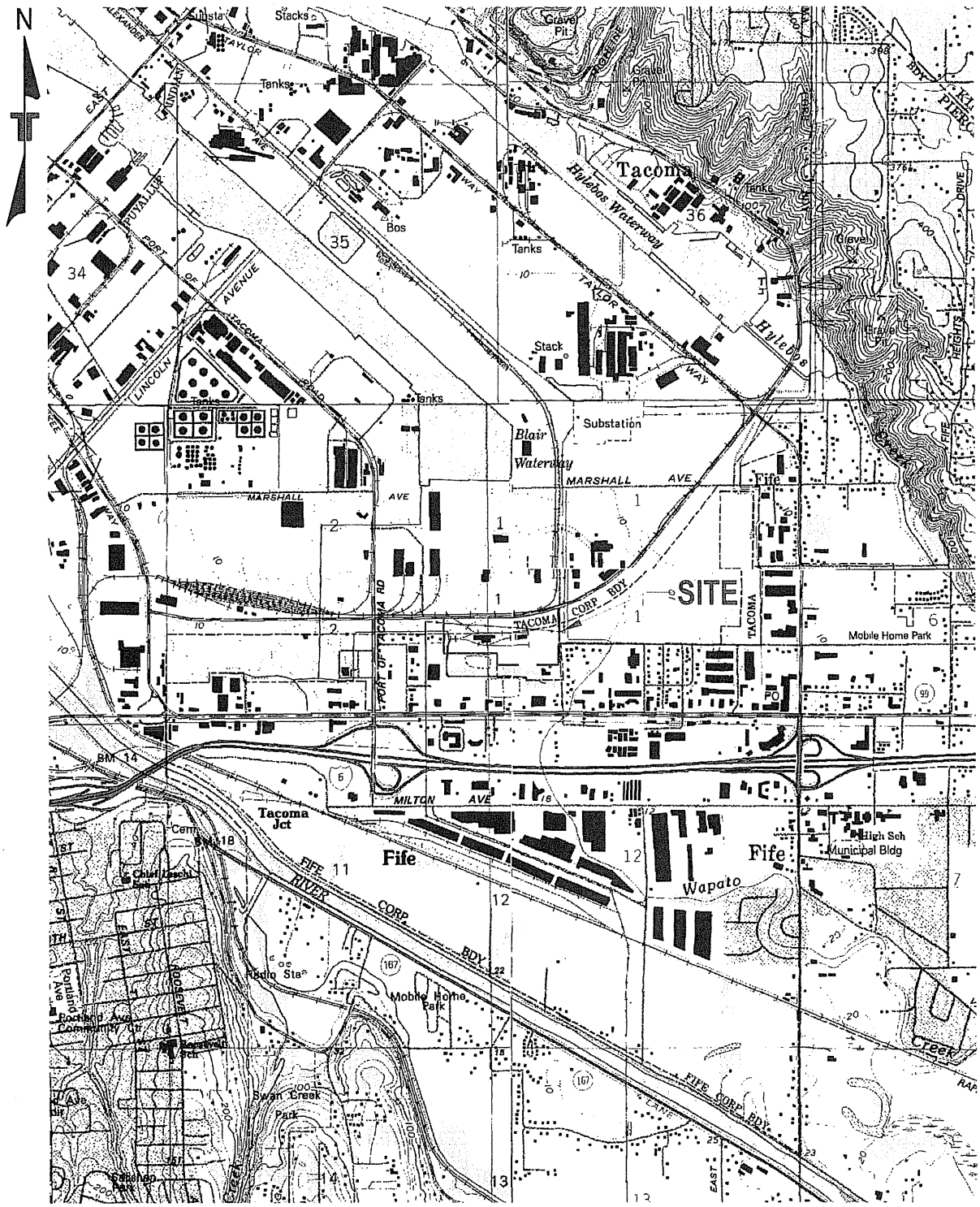
Site Description

The site is located at 4012 SR 509 South Frontage Road in Tacoma, Washington (Pierce County Parcel No. 2001867000) which is located on the parent tract of land owned by the Port of Tacoma (Pierce County Parcel No. 0320021002).

Figure 1 is a Topographic Map which presents the general site location and topography of the site on the Tacoma South and Puyallup, Washington USGS topographic quadrangle maps. Figure 2 is a Site Plan that details the general site features, previous sampling locations and remedial excavation limits and sampling locations. The general location of the remedial amendment trench is depicted in Figure 3. In addition, Figures 3 through 6 show the relative potentiometric surface for each of the four quarters of groundwater sampling conducted at the Site.

In general, subsurface soil conditions varied slightly between borings and consisted of gravelly sand fill material over silty sand and sandy silt. Groundwater was encountered at depths of approximately six to seven feet below ground surface at the groundwater monitoring wells.

TABLES



LEGEND:

— — — Approximate site boundary

USGS Topographic Map, Tacoma North, Tacoma South, Poverty Bay, and Puyallup Quadrangles, 1994

Project Mngr:	EAD
Drawn By:	EAD
Checked By:	EAD
Approved By:	MYW
Project No.	81127060
Scale:	Not to scale
File No.	81127060 Fig 1.dwg
Date:	January 2014

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Site Vicinity Map

Progress Rail
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

FIG. No. 1

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS
Progress Rail Spill Incident # 12-0773
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

Well Number	Sample Date	TOC Elevation (Feet)	Depth to Water (Feet)	Depth to Product (Feet)	Relative Groundwater Elevation (Feet)
MW-1 Screened 4-14'	8/16/2013	98.24	5.70	0.00	92.54
	2/17/2014	98.24	2.41	0.00	95.83
	5/15/2014	98.24	2.68	0.00	95.56
	8/14/2014	98.24	5.30	0.00	92.94
	11/13/2014	98.24	3.84	0.00	94.40
MW-2 screened 4-14'	8/16/2013	98.95	5.85	0.00	93.10
	2/17/2014	98.95	2.54	0.00	96.41
	5/15/2014	98.95	2.38	0.00	96.57
	8/14/2014	98.95	5.12	0.00	93.83
	11/13/2014	98.95	2.88	0.00	96.07
MW-3 screened 5-15'	2/17/2014	99.33	2.52	0.00	96.81
	5/15/2014	99.33	2.84	0.00	96.49
	8/14/2014	99.33	5.32	0.00	94.01
	11/13/2014	99.33	3.06	0.00	96.27
MW-4 screened 5-15'	2/17/2014	98.96	2.71	0.00	96.25
	5/15/2014	98.96	2.80	0.00	96.16
	8/14/2014	98.96	5.61	0.00	93.35
	11/13/2014	98.96	3.39	0.00	95.57

* all the monitoring wells are 2-inch diameter casings

TABLE 1

SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS
Progress Rail Spill Incident # 12-0773
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

Well Number	Sample Date	TOC Elevation (Feet)	Depth to Water (Feet)	Depth to Product (Feet)	Relative Groundwater Elevation (Feet)
MW-1 Screened 4-14'	8/16/2013	98.24	5.70	0.00	92.54
	2/17/2014	98.24	2.41	0.00	95.83
	5/15/2014	98.24	2.68	0.00	95.56
	8/14/2014	98.24	5.30	0.00	92.94
	11/13/2014	98.24	3.84	0.00	94.40
MW-2 screened 4-14'	8/16/2013	98.95	5.85	0.00	93.10
	2/17/2014	98.95	2.54	0.00	96.41
	5/15/2014	98.95	2.38	0.00	96.57
	8/14/2014	98.95	5.12	0.00	93.83
	11/13/2014	98.95	2.88	0.00	96.07
MW-3 screened 5-15'	2/17/2014	99.33	2.52	0.00	96.81
	5/15/2014	99.33	2.84	0.00	96.49
	8/14/2014	99.33	5.32	0.00	94.01
	11/13/2014	99.33	3.06	0.00	96.27
MW-4 screened 5-15'	2/17/2014	98.96	2.71	0.00	96.25
	5/15/2014	98.96	2.80	0.00	96.16
	8/14/2014	98.96	5.61	0.00	93.35
	11/13/2014	98.96	3.39	0.00	95.57

* all the monitoring wells are 2-inch diameter casings

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - TPH DX

Progress Rail Spill Incident # 12-0773
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

all concentrations are in micrograms per liter (µg/l)

Sample	Sampled Collected By:	Sample Date	TPH DX (NWTPH DX)	
			Diesel-Range	Oil-Range
DP-1	Panhandle	5/22/12	**2,300**	**1,000**
DP-2		5/22/12	**450**	**700**
DP-4		5/22/12	**560**	**1,500**
B-1	Terracon	11/15/12	**220x**	ND <250
B-2		11/15/12	**140x**	ND <250
B-3		11/15/12	**380x**	ND <250
B-4		11/15/12	**330x**	**390x**
B-5		11/15/12	**5,800**	**9,800x**
B-7		11/15/12	**900x**	**760x**
B-9		11/15/12	**140x**	ND <250
MW-1		8/16/13	**62x**	ND <250
		2/17/14	**150x**	ND <250
		5/15/14	**220x**	ND <250
		8/14/14	**120**	ND <250
		11/13/14	**240x**	ND <250
MW-2		8/16/13	**94x**	ND <250
		2/17/14	**200x**	ND <250
		5/15/14	**270x**	ND <250
		8/14/14	**120**	ND <250
		11/13/14	**190x**	ND <250
MW-3		2/17/14	**74x**	ND <250
		5/15/14	ND <50	ND <250
		8/14/14	ND <50	ND <250
		11/13/14	ND <50	ND <250
MW-4		2/17/14	**390x**	**410x**
		5/15/14	**400x**	**260x**
		8/14/14	**250**	ND <250
		11/13/14	**300x**	ND <250
MTCA Method A Cleanup Level			**500**	**500**

Note: Values reported above detection limits are in bold.
Shaded cells are values that exceed cleanup levels.

TPH - total petroleum hydrocarbons
MTCA - Model Toxics Control Act
x - the sample chromaticgraph pettern does not resemble the fuel standard for quantitation

TABLE 3

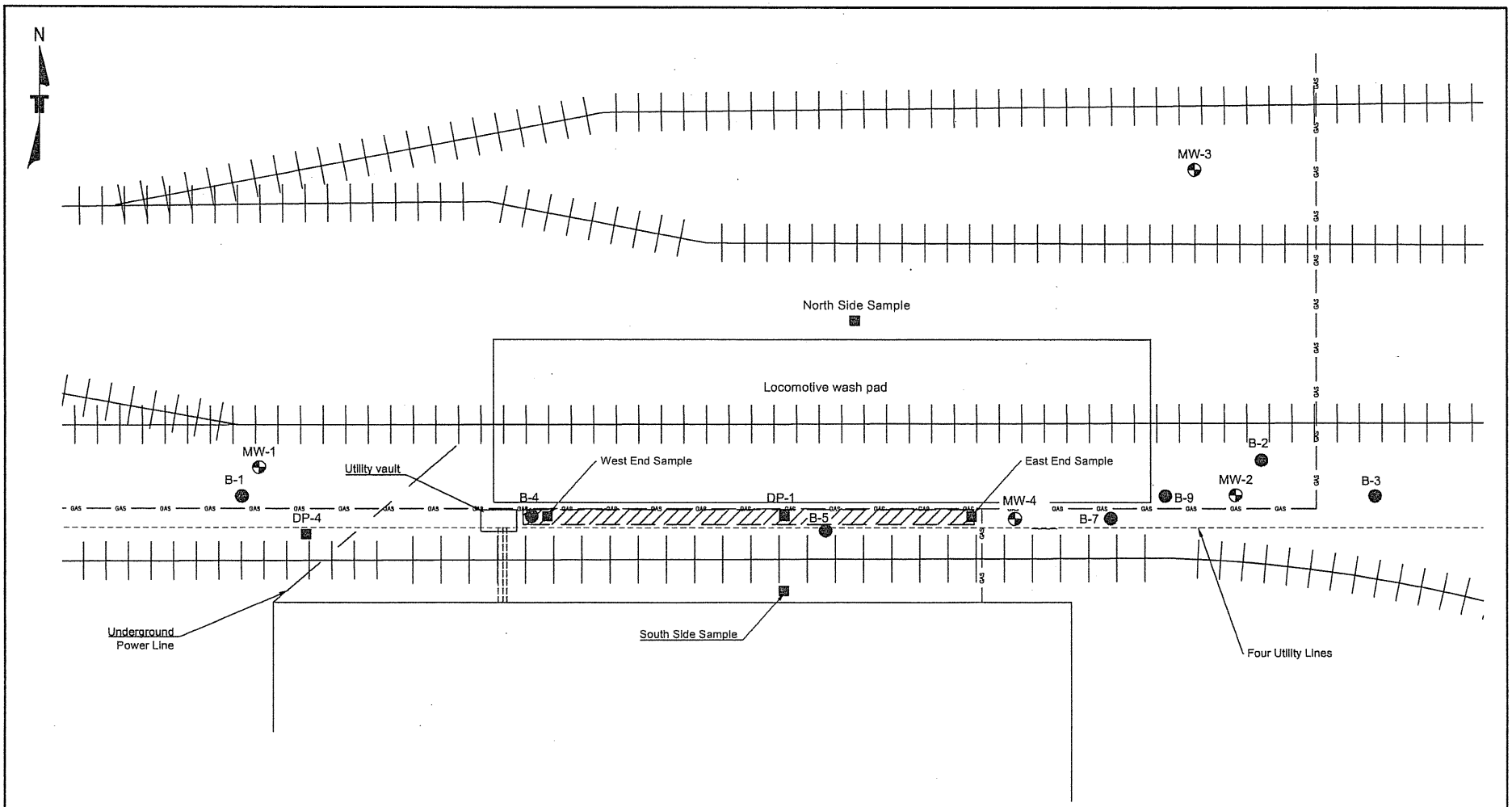
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS - BTEX, cPAHs, Naphthalenes

Progress Rail Spill Incident # 12-0773
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

all concentrations are in micrograms per liter (µg/l)

Sample Name	Sample Date	BTEX				VOC	cPAHs
		Benzene	Toluene	Ethylbeneze	Xylenes	Naphthalenes	Varies
MW-1	8/14/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
	11/13/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
MW-2	8/14/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
	11/13/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
MW-3	8/14/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
	11/13/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
MW-4	8/14/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
	11/13/2014	ND (<1)	ND (<1)	ND (<1)	ND (<3)	ND (<0.1)	ND (<0.1)
MTCA Method A Cleanup Level		**5**	**1,000**	**700**	**1,000**	**160**	**0.1**

BTEX - benzene, toluene, ethylbenzene, xylenes
VOCs - volatile organic compounds
cPAHs - carcinogenic polycyclic aromatic hydrocarbons
MTCA - Model Toxics Control Act
ND - Not detected above laboratory reporting limit.



Boring completed by Terracon

Monitoring well completed by Terracon

Boring completed by others

Excavation completed by others

20 0 5 10 20
SCALE IN FEET

Information from previous investigation was provided to Terracon by Progress Rail

Project Mngr:	EAD
Drawn By:	EAD
Checked By:	EAD
Approved By:	MYW
Project No.	81127060
Scale:	Not to scale
File No.	
Date:	March 2014

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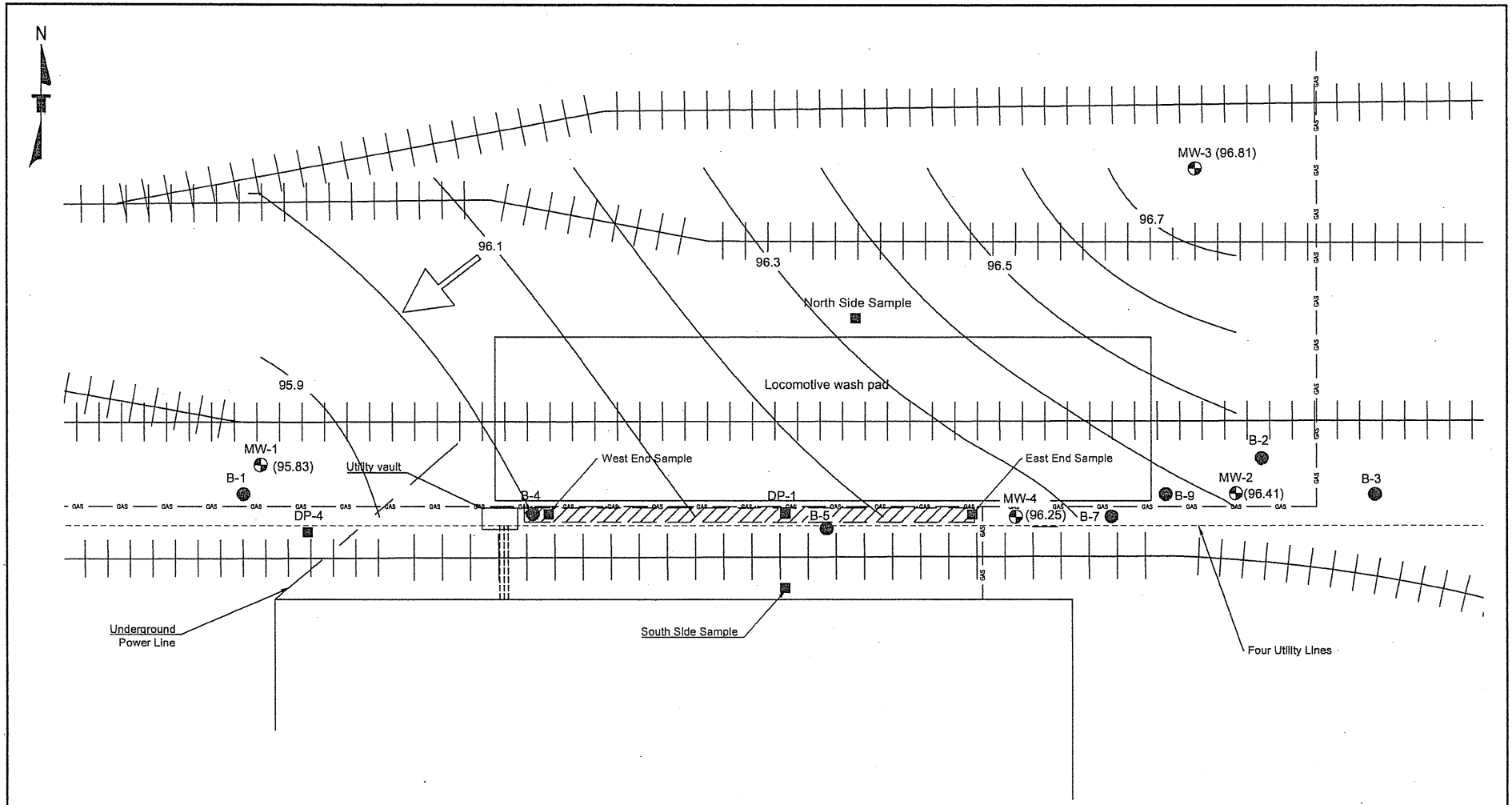
Site Diagram
Progress Rail Site
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

FIG. No. 2



Boring completed by Terracon

Monitoring well completed by Terracon

Boring completed by others

Excavation completed by others

Groundwater migration direction

20 0 5 10 20

SCALE IN FEET

Information from previous investigation was provided to Terracon by Progress Rail

Project Mngr:	EAD
Drawn By:	EAD
Checked By:	EAD
Approved By:	MVW
Project No.	8112-060
Scale:	Not to scale
File No.	
Date:	March 2014

Terracon
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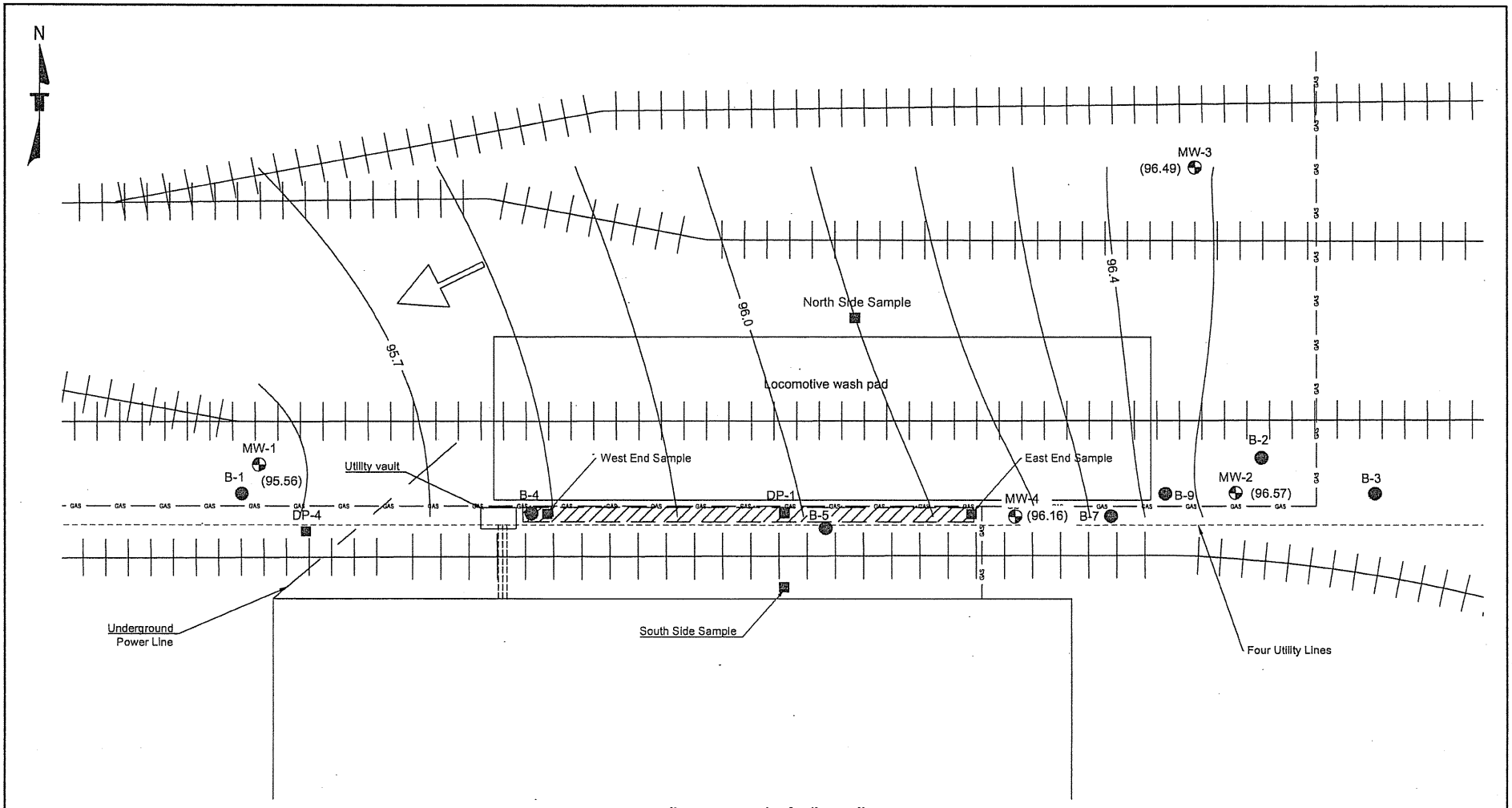
GROUNDWATER CONTOUR MAP - February 2014

Progress Rail Site
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

FIG. No. 3



Boring completed by Terracon

Monitoring well completed by Terracon

Boring completed by others

Excavation completed by others

Groundwater migration direction

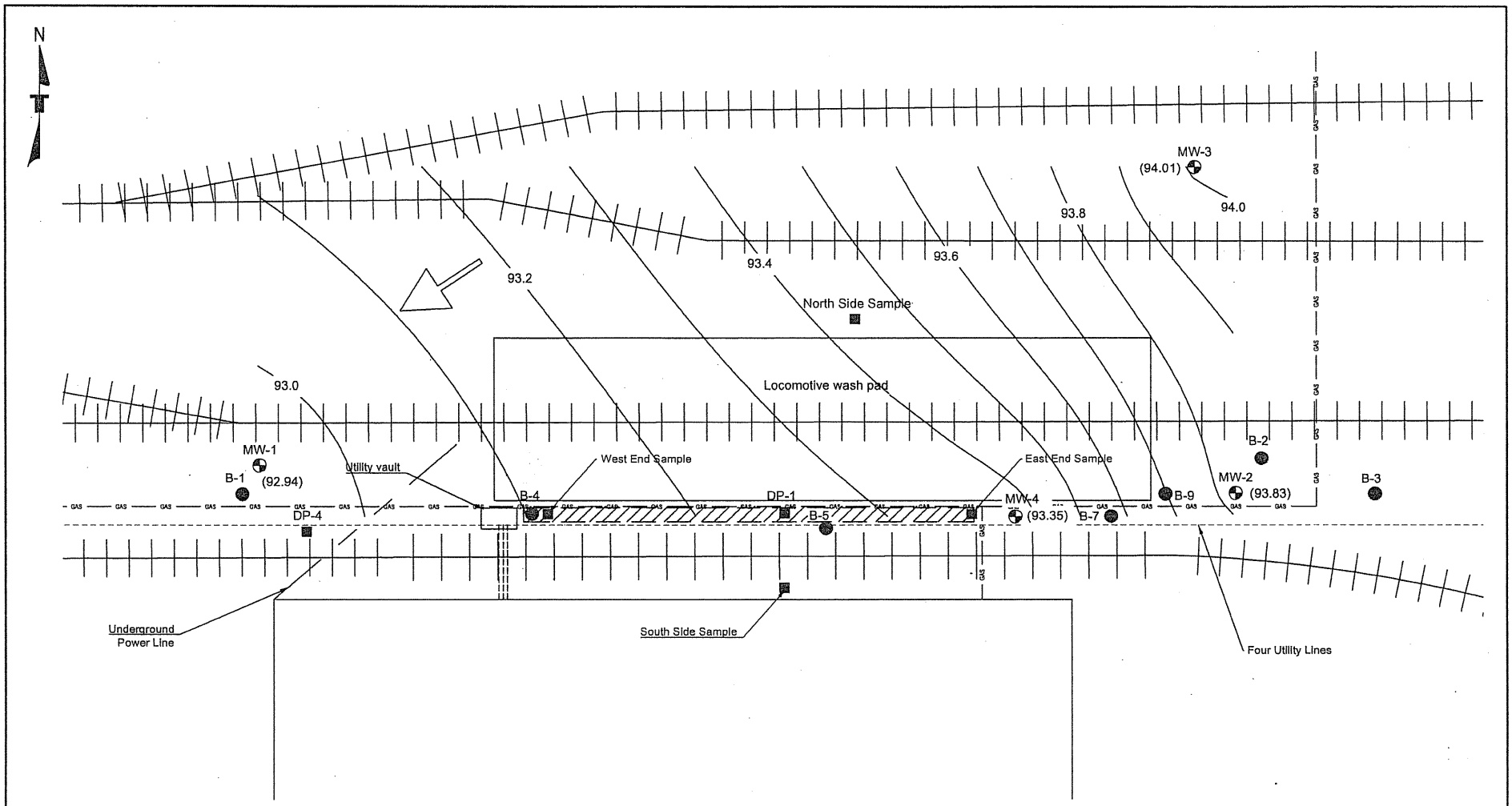
20 0 5 10 20

SCALE IN FEET

Information from previous investigation was provided to Terracon by Progress Rail

Project Mngr: EAD	Project No. 8112-060	Terracon Consulting Engineers and Scientists	**GROUNDWATER CONTOUR MAP May 2014**
Drawn By: EAD	Scale: Not to scale	21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043	Progress Rail Site
Checked By: EAD	File No.	PH. (425) 771-3304 FAX. (425) 771-3549	4012 SR 509 South Frontage Road
Approved By: MYW	Date: March 2014		Tacoma, Pierce County, Washington

FIG. No. 4



Boring completed by Terracon

Monitoring well completed by Terracon

Boring completed by others

Excavation completed by others

Groundwater migration direction

20 0 5 10 20

SCALE IN FEET

Information from previous investigation was provided to Terracon by Progress Rail

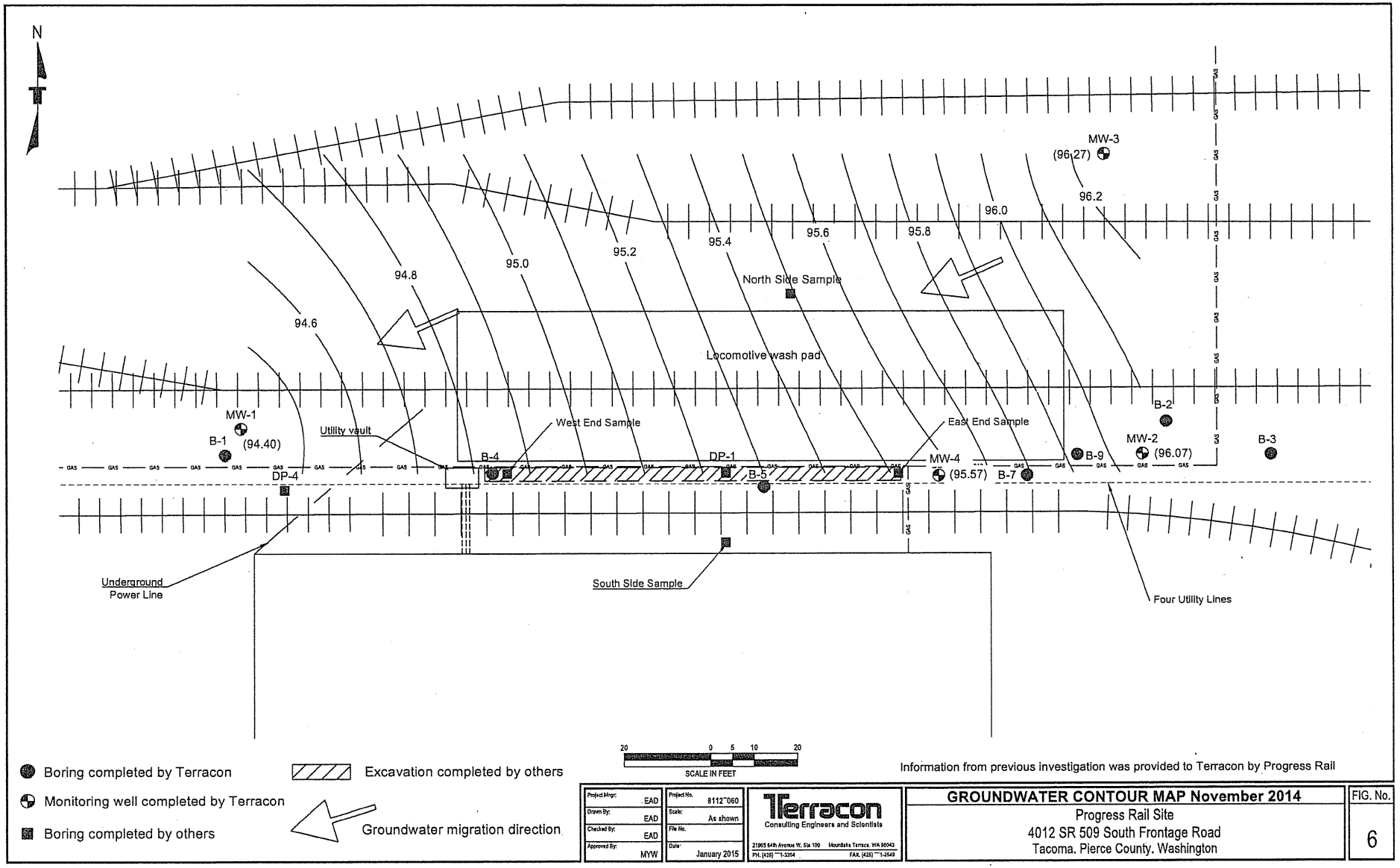
Project Mngr:	EAD
Drawn By:	EAD
Checked By:	EAD
Approved By:	MYW
Project No.	8112-060
Scale:	Not to scale
File No.	
Date:	August 2014

Terracon
Consulting Engineers and Scientists
21905 64th Avenue W, Ste 100 Mountlake Terrace, WA 98043
PH (425) 771-3304 FAX (425) 771-3549

GROUNDWATER CONTOUR MAP August 2014

Progress Rail Site
4012 SR 509 South Frontage Road
Tacoma, Pierce County, Washington

FIG. No. 5


N
MW-3
(96.27)
96.2
96.0
95.8
95.6
95.4
95.2
95.0
94.8
94.6
North Side Sample
Locomotive wash pad
MW-1
B-1
(94.40)
Utility vault
West End Sample
East End Sample
B-4
DP-1
MW-4
(95.57)
B-9
B-2
MW-2
(96.07)
B-3
DP-4
B-5
B-7
Underground
Power Line
South Side Sample
Four Utility Lines
20 0 5 10 20
SCALE IN FEET
Boring completed by Terracon
Monitoring well completed by Terracon
Boring completed by others
Excavation completed by others
Groundwater migration direction
Information from previous investigation was provided to Terracon by Progress Rail
Project Mngr: EAD
Drawn By: EAD
Checked By: EAD
Approved By: MYW
Project No. 8112-060
Scale: As shown
File No.
Date: January 2015
Terracon
Consulting Engineers and Scientists
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GROUNDWATER CONTOUR MAP November 2014
Progress Rail Site
4012 SR 509 South Frontage Road
Tacoma. Pierce County. Washington
FIG. No.
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