



Ms. Jamie Verrigni
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, New York 12233-7014

Subject:
Rensselaer Non-Owned Former MGP Site (#V00488)
Well Gauging Work Plan

Dear Ms. Verrigni:

On behalf of National Grid, this letter presents a work plan for conducting monitoring well gauging at the Rensselaer Non-Owned Former Manufactured Gas Plant (MGP) Site (Site V00488).

As presented in the December 2013 *Remedial Investigation Report* (RI Report), only limited quantities of non-aqueous phase liquid (NAPL) have been observed in select monitoring wells to date. The last round of water level and NAPL gauging was conducted at the site in October 2012 as part of the remedial investigation. Therefore, in support of the Alternatives Analysis phase, ARCADIS plans to conduct site-wide monitoring well gauging to confirm site conditions.

Monitoring well gauging activities will be completed in accordance with the *Health and Safety Plan* (HASP) included as Attachment 1. For reference, Figure 1 depicts the monitoring well locations. Gauging will be conducted in the early-morning or late-afternoon such that field personnel will have access to monitoring wells located within the parking lot portions of the site. At each overburden and bedrock monitoring well, field personnel will measure depth to water, depth to bottom, and NAPL thickness (if present). All field measurements and notable observations will be recorded in a field book.

If recoverable quantities of NAPL are present in site wells, ARCADIS plans to remove the NAPL during a subsequent gauging/removal event. Due to the non-owned and unsecured nature of the site, recovered NAPL cannot be stored overnight and must be removed from the site at the end of each work day. If recoverable quantities of NAPL are present, ARCADIS will coordinate with National Grid's waste disposal vendor (Clean Harbors) to arrange for the subsequent gauging/NAPL removal date(s) and associated waste pick-up.

Imagine the result

ARCADIS of New York, Inc.
6723 Towpath Road
P O Box 66
Syracuse
New York 13214-0066
Tel 315 446 9120
Fax 315 449 0017
www.arcadis-us.com

ENVIRONMENT

Date:
August 8, 2014

Contact:
Jason Golubski, P.E.

Phone:
315.671.9437

Email:
jason.golubski@arcadis-us.com

Our ref:
B0036730

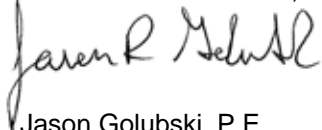
The subsequent gauging/removal event will consist of measuring NAPL thickness (at wells previously identified to contain NAPL), recovering the NAPL through manual bailing or use of a portable peristaltic pump, and containerizing the NAPL and other investigation-derived waste (IDW) in a New York State Department of Transportation- (NYSDOT-) approved drum. Following NAPL removal ARCADIS will re-gauge the evacuated wells the next day, and again one to two weeks later, to evaluate if NAPL has re-accumulated. At the end of each day, Clean Harbors will pick-up recovered NAPL and IDW from the site and transport the material off-site for disposal.

The results of the monitoring well gauging and NAPL recovery (if necessary) will be presented to NYSDEC in a letter report and will be used to evaluate potential remedial options for the site as part of the on-going Alternatives Analysis. Additionally, the letter will present recommended future gauging/NAPL removal activities (if necessary).

Please do not hesitate to contact National Grid's project manager, Jim Morgan at 315.428.3101, or myself at 315.617.9437 if you have any questions or comments regarding the information presented in this work plan.

Sincerely,

ARCADIS of New York, Inc.



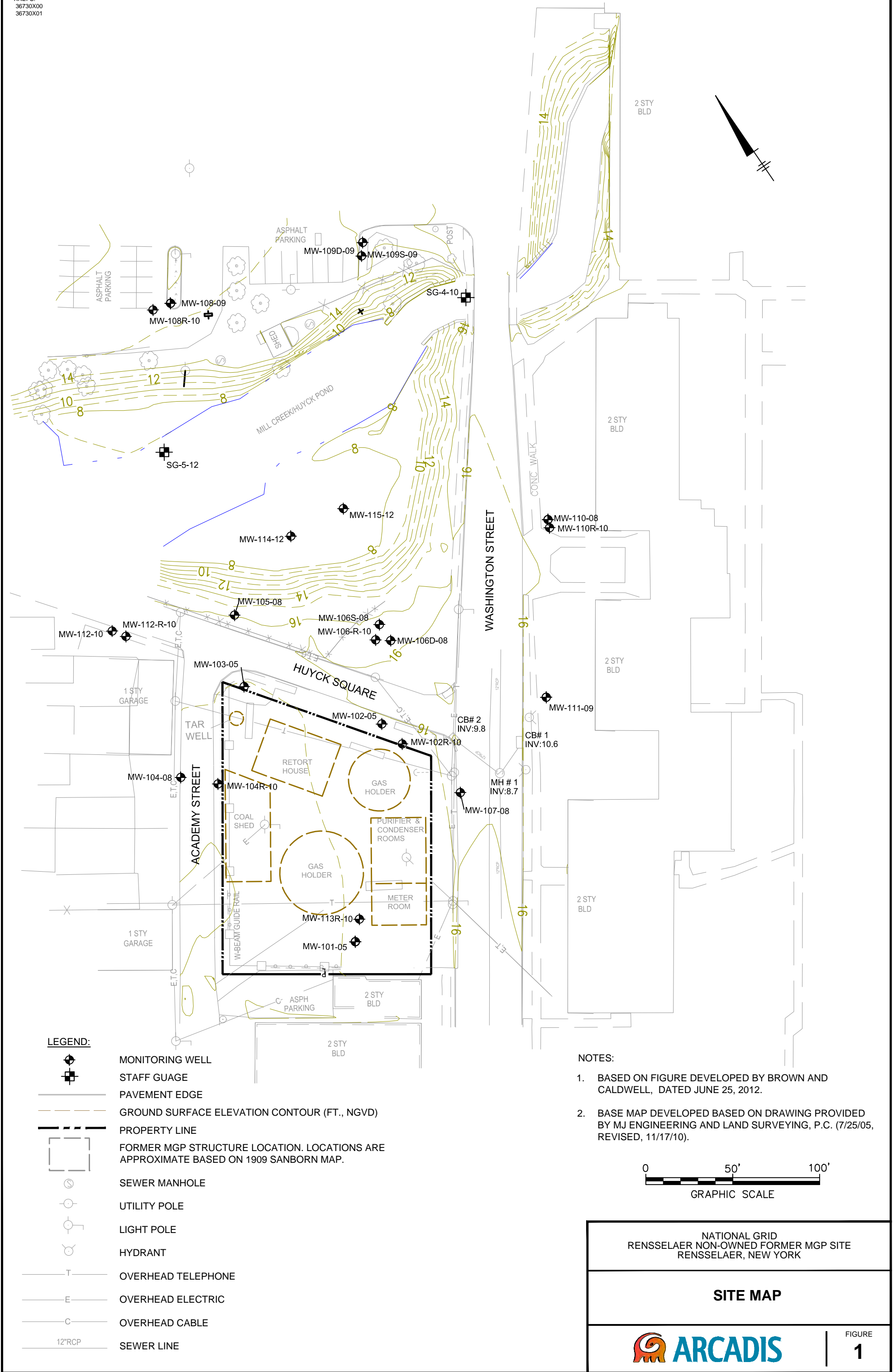
Jason Golubski, P.E.
Project Engineer

Copies:

James Candiloro, NYSDEC
James Morgan, National Grid
Terry Young, PE, ARCADIS

Figure 1

XREFS:
36730X00
36730X01





Attachment A

Health and Safety Plan

Site Specific Health and Safety Plan

Revision 12 7/1/2014

Project Name: National Grid Rensselaer Non-Owned
Former MGP Site

Project Number: B0036730.0000.00001
Client Name: National Grid
Date: 8/6/2014
HASP Expires: 8/6/2015
Revision:

Approvals:

HASP Developer: Meghan Kiser

Project Manager: Jason Golubski

HASP Reviewer: Dave Groff

Emergency Information

Site Address: Washington Street
Rensselaer County, New York 12144

Emergency Phone Numbers:

Emergency (fire, police, ambulance)	911
Emergency (facility specific, if applicable):	
Emergency Other (specify)	
Client Contact	Jim Morgan
	315-428-3101
WorkCare (non-lifethreatening injury/illness)	1-800-455-6155
Project H&S	Chuck Webster
Task Manager	Jason Golubski
Project Manager	Jason Golubski
Corporate H&S Specialist	Julie Santaniello
Corporate H&S Director	Denis Balcer

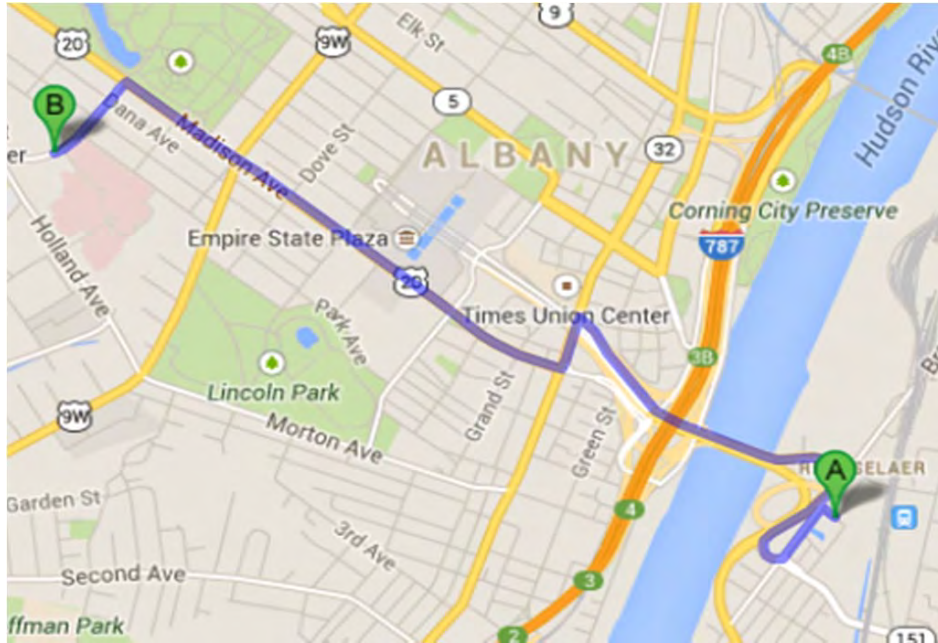
Hospital Name and Address: Albany Medical Center Hospital
43 New Scotland Ave
Albany, NY 12208

Hospital Phone Number: 518-262-3125

Incident Notification Process

1 Dial 911/Facility Emergency Number/WorkCare as applicable	
2 Contact PM/Supervisor	Jason Golubski
3 Contact Corporate H&S	Denis Balcer
4 Contact Client	Jim Morgan

Route to the Hospital



Washington St, Rensselaer, NY 12144

1. Head **northwest** on **4th Ave** toward **Broadway** go 187 ft
total 187 ft
2. Turn **left** onto **Broadway** go 0.1 mi
total 0.2 mi
About 53 secs
3. Turn **right** to merge onto **US-20 W/U.S. 9 N/Dunn Memorial Bridge/Rte 9 N** toward **I-787** go 0.7 mi
total 0.9 mi
Continue to follow US-20 W/Dunn Memorial Bridge
About 1 min
4. Take the **NY-32/So Pearl St/US-20 W** ramp go 0.3 mi
total 1.1 mi
5. Turn **left** onto **NY-32 S/US-20 W/S Pearl St** go 0.1 mi
total 1.2 mi
6. Take the **3rd right** onto **Madison Ave** go 1.1 mi
total 2.3 mi
About 4 mins
7. Turn **left** onto **New Scotland Ave** go 0.2 mi
total 2.5 mi
Destination will be on the right
About 1 min



Albany Medical Center Hospital
43 New Scotland Ave, Albany, NY 12208

General Information

Site Type (select all applicable where work will be conducted):

- | | |
|-----------------------------------------------------------------|-------------------------------------------------------------------|
| <input type="checkbox"/> Active | <input type="checkbox"/> Railroad |
| <input type="checkbox"/> Bridge | <input type="checkbox"/> Remote Area |
| <input type="checkbox"/> Buildings | <input checked="" type="checkbox"/> Residential |
| <input checked="" type="checkbox"/> Commercial | <input type="checkbox"/> Retail |
| <input type="checkbox"/> Construction | <input type="checkbox"/> Roadway (public, including right-of-way) |
| <input type="checkbox"/> Military Installation | <input type="checkbox"/> Water Treatment Plant |
| <input type="checkbox"/> Inactive Industrial | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Active Industrial | <input type="checkbox"/> Unsecured |
| <input type="checkbox"/> Landfill | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Marine | <input type="checkbox"/> Other (specify): _____ |
| <input type="checkbox"/> Mining | |
| <input checked="" type="checkbox"/> Parking Lot/Private Roadway | |

Work with exposure to vehicular traffic on private property requires preparation of a Site Traffic Awareness and Response (STAR) Plan.

Surrounding Area and Topography (select one):

- ☐ Surrounding area and topography are presented in the project work plan
- ☒ Surrounding area and topography (*briefly describe*):
The site is located on the east side of the Hudson River, within the Hudson Lowlands physiographic province. The majority of the project area is paved parking lot. The northern portion of the project area, north of Huyck Street, is grassy land bisected by Huyck (Mill) Creek. The eastern portion of the site (the east side of Washington Street) contains structures that were part of a felt mill, while the western portion (the east side of Academy Street) is comprised of the backyards of nineteenth century houses.

Simultaneous Operations (SimOps)

- ☒ Not applicable
- ☐ SimOps will exist on this project

Site Background (select one):

- ☐ Site background is presented in the project work plan
- ☒ Site background (*briefly describe*):
MGP operations began in the 1860's and continued into the 1920's. Manufactured gas at the site was produced via the coal carbonization process. Remnants of some former MGP structures are present at the Site, primarily in the subsurface, including the base of two gas holders and a tar well. Historical MGP operations produced byproducts including coal/MGP tar, spent purifier waste, coal slag, cinders and ash.

Project Tasks

The following tasks are identified for this project:

Examples: "Drilling/soil sampling", "Surveying", "General Inspections", "Construction Management/Inspections"

- 1 General site work
- 2 NAPL monitoring
- 3
- 4
- 5

- ☐ Subcontractor H&S information is attached ☐ ARCADIS Standards apply to augment JSA
☐ Utility clearance required. *[list standard(s) below in "Comments"]*
☐ FHSHB sections apply *(list below in "Comments")* ☐ Journey Management Plan attached
☐ State specific H&S required:

Comments:

II.H - Stop Work Authority; III.A - Daily Safety Meetings, III.L - Noise, III.R - Personal Protective Equipment; III.MM - Utility Location; IV.D - Excavation/Trenching

Roles and Responsibilities

Name	Role	Additional Responsibilities (Describe)
1 Jason Golubski	PM	Overall management of project
2 Jason Golubski	TM	Coordinate all field work
3 TBD	Field Lead	
4 TBD	SSO	
5		
6		

Training

<i>All ARCADIS employees are required to have the following training:</i> Hazwoper 40 Hour PPE Defensive Driving - Smith On-Line H&S Program Orientation	<i>Selected ARCADIS employees are required to have the following additional training:</i> Names or Numbers from above First Aid/CPR <u>All onsite personnel</u> DOT HazMat #1 <u>All onsite personnel</u>
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Hazard Analysis

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low	4 - Medium	8 - High	12 - High

Division

Environment

Business Unit

All Categories

Task 1: General site work

Hazardous Activity #1

Field-Ambient environment - exposure heat, cold, sun, weather, etc

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	-	Driving	M	Electrical	L
Environmental	L	Gravity	H	Mechanical	-	Motion	L
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk:

Medium

Mitigated Risk:

Medium

if utilizing:

Controls that should be Considered:

Primary: TRACK Field H&S Handbook Secondary: H&S Standards Engineering Controls (specify below) Admin. Controls (specify below) Specialized Equipment (specify below) PPE (see HASP "PPE" section)

Enter Required Controls:

Engineering Control - Use a tent or vehicle to protect workers from the elements during breaks
Admin Control - Rotation of workers if necessary based on hot or cold conditions

Hazardous Activity #2

Field-Walking - uneven or slippery terrain

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	M	Mechanical	-	Motion	-
Personal Safety	-	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk:

Medium

Mitigated Risk:

Medium

if utilizing:

Controls that should be Considered:

Primary: TRACK Secondary: Housekeeping PPE (see HASP "PPE" section)

Enter Required Controls:

Engineering Control - Use cones and reflective tape to mark out trip hazards
Admin Control - Familiarize workers with the site layout and tripping hazards or locations of slippery terrain during daily safety meeting

Hazardous Activity #3

General-Lifting and movement of equipment of varying weights at varying frequencies by manual methods

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk:

High

Mitigated Risk:

Medium

if utilizing:

Controls that should be Considered:

Primary: TRACK Engineering Controls (specify below) Job Rotation Secondary: JSAs Job Briefing/Site Awareness Specialized Equipment (specify below) Admin. Controls (specify below) Engineering Controls (specify below)

Enter Required Controls:

Engineering Control - Use field vehicle to facilitate moving equipment when possible. Set up site to reduce the risk of bending and reaching for equipment
Admin Control - Ensure workers are trained in proper lifting techniques (lifting with the legs and not the back, use 2 people to carry heavy equipment)

Hazardous Activity #4

Field-Security - high profile projects with irritated or upset public

Hazard Types (unmitigated ranking H-High, M-Medium, L-Low):

Biological	-	Chemical	-	Driving	-	Electrical	-
Environmental	-	Gravity	-	Mechanical	-	Motion	-
Personal Safety	M	Pressure	-	Radiation	-	Sound	-

Overall Unmitigated Risk:

Medium

Mitigated Risk:

Low

if utilizing:

Controls that should be Considered:

Primary: TRACK JSAs Site AwarenessCont/Emerg. Planning Secondary: Job Briefing/Site Awareness

Enter Required Controls:

Admin Control - Ensure all workers onsite are properly trained with how to interact with and answer questions from the public.

Risk Assessment Matrix		Likelihood Ratings** (likelihood that incident would occur)			
Consequences Ratings*		A	B	C	D
People	Property	0 Almost impossible	1 Possible but unlikely	2 Likely to happen	3 Almost certain to happen
1 - Slight or no health	Slight or no damage	0 - Low	1 - Low	2 - Low	3 - Low
2 - Minor health effect	Minor damage	0 - Low	2 - Low	4 - Medium	6 - Medium
3 - Major health effect	Local damage	0 - Low	3 - Low	6 - Medium	9 - High
4 - Fatalities	Major damage	0 - Low	4 - Medium	8 - High	12 - High

Task 2: NAPL monitoring																									
Hazardous Activity #1																									
Field-Measurement - water levels and well sounding																									
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low): <table style="width: 100%; margin-top: 10px;"> <tr> <td>Biological</td><td>-</td> <td>Chemical</td><td>L</td> <td>Driving</td><td>-</td> <td>Electrical</td><td>-</td> </tr> <tr> <td>Environmental</td><td>-</td> <td>Gravity</td><td>L</td> <td>Mechanical</td><td>-</td> <td>Motion</td><td>M</td> </tr> <tr> <td>Personal Safety</td><td>-</td> <td>Pressure</td><td>-</td> <td>Radiation</td><td>-</td> <td>Sound</td><td>-</td> </tr> </table>		Biological	-	Chemical	L	Driving	-	Electrical	-	Environmental	-	Gravity	L	Mechanical	-	Motion	M	Personal Safety	-	Pressure	-	Radiation	-	Sound	-
Biological	-	Chemical	L	Driving	-	Electrical	-																		
Environmental	-	Gravity	L	Mechanical	-	Motion	M																		
Personal Safety	-	Pressure	-	Radiation	-	Sound	-																		
Overall Unmitigated Risk: Low Mitigated Risk: Low if utilizing: Primary: TRACK JSAs Secondary: Job Briefing/Site Awareness PPE (see HASP "PPE" section)																									
Controls that should be Considered:																									
Enter Required Controls: Admin Control - Ensure workers are trained in proper use of oil water interface probe.																									
Hazardous Activity #2																									
General-Pinch points - moving parts from doors, closures, rotating devices, falling objects, well covers, manholes, etc																									
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low): <table style="width: 100%; margin-top: 10px;"> <tr> <td>Biological</td><td>-</td> <td>Chemical</td><td>-</td> <td>Driving</td><td>-</td> <td>Electrical</td><td>-</td> </tr> <tr> <td>Environmental</td><td>-</td> <td>Gravity</td><td>L</td> <td>Mechanical</td><td>-</td> <td>Motion</td><td>M</td> </tr> <tr> <td>Personal Safety</td><td>-</td> <td>Pressure</td><td>M</td> <td>Radiation</td><td>-</td> <td>Sound</td><td>-</td> </tr> </table>		Biological	-	Chemical	-	Driving	-	Electrical	-	Environmental	-	Gravity	L	Mechanical	-	Motion	M	Personal Safety	-	Pressure	M	Radiation	-	Sound	-
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Environmental	-	Gravity	L	Mechanical	-	Motion	M																		
Personal Safety	-	Pressure	M	Radiation	-	Sound	-																		
Overall Unmitigated Risk: Low Mitigated Risk: Low if utilizing: Primary: TRACK JSAs Engineering Controls (specify below) Secondary: Admin. Controls (specify below) Job Briefing/Site Awareness Inspections PPE (see HASP "PPE" section)																									
Controls that should be Considered:																									
Enter Required Controls: Engineering Control - Wear leather gloves when removing well covers, do not use fingers to lift up cover. Admin Control - Ensure workers are aware of the site conditions and that they are trained on how to properly remove a well cover without injury.																									
Hazardous Activity #3																									
Field-Traffic - parking lots																									
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low): <table style="width: 100%; margin-top: 10px;"> <tr> <td>Biological</td><td>-</td> <td>Chemical</td><td>-</td> <td>Driving</td><td>M</td> <td>Electrical</td><td>-</td> </tr> <tr> <td>Environmental</td><td>-</td> <td>Gravity</td><td>-</td> <td>Mechanical</td><td>-</td> <td>Motion</td><td>H</td> </tr> <tr> <td>Personal Safety</td><td>M</td> <td>Pressure</td><td>-</td> <td>Radiation</td><td>-</td> <td>Sound</td><td>-</td> </tr> </table>		Biological	-	Chemical	-	Driving	M	Electrical	-	Environmental	-	Gravity	-	Mechanical	-	Motion	H	Personal Safety	M	Pressure	-	Radiation	-	Sound	-
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Environmental	-	Gravity	-	Mechanical	-	Motion	H																		
Personal Safety	M	Pressure	-	Radiation	-	Sound	-																		
Overall Unmitigated Risk: Medium Mitigated Risk: Low if utilizing: Primary: TRACK STAR Plan Engineering Controls (specify below) Secondary: Job Briefing/Site Awareness																									
Controls that should be Considered:																									
Enter Required Controls: Engineering Control - Use traffic cones to mark the area of the parking lot workers will be using. Admin Control - Conduct field operations in accordance with the STAR plan for the site.																									
Hazardous Activity #4																									
Field-Sampling - monitoring well sampling - manual (bailer, check valve)																									
Hazard Types (unmitigated ranking H-High, M-Medium, L-Low): <table style="width: 100%; margin-top: 10px;"> <tr> <td>Biological</td><td>-</td> <td>Chemical</td><td>L</td> <td>Driving</td><td>-</td> <td>Electrical</td><td>-</td> </tr> <tr> <td>Environmental</td><td>-</td> <td>Gravity</td><td>L</td> <td>Mechanical</td><td>-</td> <td>Motion</td><td>M</td> </tr> <tr> <td>Personal Safety</td><td>-</td> <td>Pressure</td><td>-</td> <td>Radiation</td><td>-</td> <td>Sound</td><td>-</td> </tr> </table>		Biological	-	Chemical	L	Driving	-	Electrical	-	Environmental	-	Gravity	L	Mechanical	-	Motion	M	Personal Safety	-	Pressure	-	Radiation	-	Sound	-
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Environmental	-	Gravity	L	Mechanical	-	Motion	M																		
Personal Safety	-	Pressure	-	Radiation	-	Sound	-																		
Overall Unmitigated Risk: Low Mitigated Risk: Low if utilizing: Primary: TRACK JSAs Engineering Controls (specify below) Job Rotation Secondary: Job Briefing/Site Awareness Admin. Controls (specify below) PPE (see HASP "PPE" section)																									
Controls that should be Considered:																									
Enter Required Controls: Engineering Control - Wear proper PPE to ensure no contact is made with NAPL. Admin Control - Ensure all workers are familiar with the proper procedures for handling NAPL.																									

☐ HAZCOM/GHS for this project is managed by the client or general contractor

(Modify quantities as needed)

<input type="checkbox"/>	Remediation	Qty.	<input type="checkbox"/>	Other:	Qty.	<input type="checkbox"/>		Qty.
<input type="checkbox"/>	Not applicable		<input type="checkbox"/>	Not applicable		<input type="checkbox"/>	_____	
<input type="checkbox"/>	_____		<input type="checkbox"/>	Spray paint	≤ 6 cans	<input type="checkbox"/>	_____	
<input type="checkbox"/>	_____		<input type="checkbox"/>	WD-40	≤ 1 can	<input type="checkbox"/>	_____	
<input type="checkbox"/>	_____		<input type="checkbox"/>	Pipe cement	≤ 1 can	<input type="checkbox"/>	_____	
<input type="checkbox"/>	_____		<input type="checkbox"/>	Pipe primer	≤ 1 can	<input type="checkbox"/>	_____	
<input type="checkbox"/>	_____		<input type="checkbox"/>	Mineral spirits	≤ 1 gal	<input type="checkbox"/>	_____	

Indicate below how MSDS information will be provided:

☐ Not applicable

☒ Printed copy in company vehicle

☐ Printed copy in the project trailer/office

☒ Printed copy attached

☐ Electronic copy on field computer

☐ Bulk quantities of the following materials will be stored:

☐ Contractor MSDSs/SDSs are not applicable

☐ Contractor MSDSs/SDSs are attached

☐ Contractor MSDSs/SDSs will be on site and located: _____

associated with bulk storage of materials.

Monitoring

☒ Chemical air monitoring is not required for this project.

For projects requiring air monitoring, list the relevant constituents representing a hazard to site workers.

Constituent	Max. Conc.	TWA	STEL	IDLH	LEL/UEL	VD	VP	IP
	Units	Units	Units	Units	(%)	Air=1	(mm Hg)	(eV)
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
None		9999	- 0	- 0	- 0	0 0	0 0	0
Notes: TWAs are ACGIH 8 hr-TLVs unless noted.		p-ppm	m-mg/m3	c2- ceiling (2 hr)	se-sensitizer	#N/A" -Constituent is not in database, manually enter information		
		s- skin	c-ceiling	"9999" - NA	O-OSHA PEL			
		r- respirable	i-inhalable	N-NIOSH 10 hr REL				

Monitoring Equipment and General Protocols

Air monitoring is required for any task or activity where employees have potential exposure to vapors or particulates above the TWA. Action levels below are appropriate for most situations. Contact the project H&S contact for all stop work situations. Select monitoring frequency and instruments to be used.

Monitoring Frequency:

Indicator Tube/Chip Frequency:

Indicator tube/chip monitoring not required

	Instrument	Action Levels	Actions
<input type="checkbox"/>	Photoionization Detector Lamp (eV):	< 0.000 0.000 - 0.0 > 0.0	Continue work Sustained >5 min. continuous monitor, review eng. controls and PPE, proceed with caution Sustained >5 min. stop work, contact SSO
<input type="checkbox"/>	Flame Ionization Detector (FID)	< 0.0 0.0 - 0.0 > 0.0	Continue work Sustained >5 min. continuous monitor, review eng. controls and PPE, use caution Sustained >5 min. stop work, contact SSO
<input type="checkbox"/>	LEL/O2 Meter	0-5% LEL >5-10% LEL >10% LEL 19.5%-23.5% O2 <19.5% O2 >23.5% O2	Continue work Continuous monitor, review eng. controls, proceed with caution Stop work, evacuate, contact SSO Normal, continue work O2 deficient, stop work, evacuate, cont. SSO O2 enriched, stop work, evacuate, contact SSO
<input type="checkbox"/>	Indicator: tube chip Compound(s):	≤PEL/TLV >PEL/TLV	Continue work Stop work, review eng. controls and PPE, contact SSO
<input type="checkbox"/>	Particulate Monitor (mists, aerosols, dusts in mg/m ³)	< 2.5 2.5 - 5.000 > 5.000	Continue work Use engineering controls, monitor continuously Stop work, review controls, contact SSO
<input type="checkbox"/>	Other:	Specify:	Specify:

Personal Protective Equipment (PPE)

See JSA or Permit for the task being performed for required PPE. If work is not conducted under a JSA or Permit, refer to the governing document for PPE requirements. At a minimum, the following checked PPE is required for all tasks during field work (outside of field office trailers and vehicles) not covered by a JSA or Permit on this project:

Minimum PPE required to be worn by all staff on project:

<input checked="" type="checkbox"/> Hard hat	<input type="checkbox"/> Snake chaps/guards	<input type="checkbox"/> Coveralls:	_____
<input checked="" type="checkbox"/> Safety glasses	<input type="checkbox"/> Briar chaps	<input type="checkbox"/> Apron:	_____
<input type="checkbox"/> Safety goggles	<input type="checkbox"/> Chainsaw chaps	<input checked="" type="checkbox"/> Chem. resistant gloves:	Nitrile
<input type="checkbox"/> Face shield	<input type="checkbox"/> Sturdy boot	<input checked="" type="checkbox"/> Gloves other:	Leather
<input type="checkbox"/> Hearing protection	<input checked="" type="checkbox"/> Steel or comp. toe boot	<input type="checkbox"/> Chemical boot:	_____
<input type="checkbox"/> Rain suit	<input type="checkbox"/> Metatarsal boot	<input type="checkbox"/> Boot other:	_____
<input type="checkbox"/> Other:	_____	<input checked="" type="checkbox"/> Traffic vest, shirt or coat:	Class II
_____	_____	<input type="checkbox"/> Life vest:	_____

Task specific PPE:

Comments:

Medical Surveillance (*check all that apply*)

- ☐ Medical Surveillance is not required for this project.
- ☒ HAZWOPER medical surveillance applies to all ARCADIS site workers on the project.
- ☐ HAZWOPER medical surveillance applies to all subcontractors on the project.
- ☐ HAZWOPER medical surveillance applies to all site workers on the project except:

☐ Other medical surveillance required (describe type and who is required to participate):

☐ Client drug and/or alcohol testing required.

Hazardous Materials Shipping and Transportation (*check all that apply*)

- ☒ Not applicable, no materials requiring a Shipping Determination (SD) will be transported or shipped
- ☐ A SD has been reviewed and provided to field staff
- ☐ A SD is attached
- ☐ All HazMat will be transported under Materials of Trade by ARCADIS (see generic MOT SD Form)
- ☐ Other (specify):

Roadway Work Zone Safety (*check all that apply*)

- ☐ Not applicable for this project
- ☐ All or portions of the work conducted under a TCP
- ☒ All or portions of the work conducted under a STAR Plan
- ☒ TCP or STAR Plan provided to field staff
- ☒ TCP or STAR Plan attached
- ☐ Other (specify):

ARCADIS Commercial Motor Vehicles (CMVs)

This section is applicable to ARCADIS operated vehicles only

- ☒ This project will **not** utilize CMV drivers
- ☐ This project will utilize CMV drivers

Site Control (check all that apply)

- ☐ Not applicable for this project.
- ☐ Site control protocols are addressed in JSA or other supporting document (attach)
- ☐ Maintain an exclusion zone of _____ ft. around the active work area
- ☒ Site control is integrated into the STAR Plan or TCP for the project
- ☐ Level C site control - refer to Level C Supplement attached
- ☐ Other (specify):

Decontamination (check all that apply)

- ☐ Not applicable for this project.
- ☐ Decontamination protocols are addressed in JSA or other governing document (attach)
- ☒ Level D work- wash hands and face prior to consuming food, drink or tobacco.
- ☐ Level D Modified work- remove coveralls and contain, wash hands and face prior to consuming food, drink or tobacco. Ensure footwear is clean of site contaminants
- ☐ Level C work - refer to the Level C supplement attached.
- ☐ Other (specify):

Sanitation (check all that apply)

- ☐ Mobile operation with access to off-site restrooms and potable water
- ☐ Restroom facilities on site provided by client or other contractor
- ☐ Project to provide portable toilets (1 per 20 workers)
- ☐ Potable water available on site
- ☐ Project to provide potable water (assume 1 gal./person/day)
- ☐ Project requires running water (hot and cold, or tepid) with soap and paper towels

Safety Briefings (check all that apply)

- ☒ Safety briefing required daily
- ☐ Safety briefing required twice a day
- ☐ Safety briefings required at the following frequency: _____
- ☐ Subcontractors to participate in ARCADIS safety briefings
- ☐ ARCADIS to participate in client/contractor safety briefings
- ☐ Other (specify):

Safety Equipment and Supplies

Safety equipment/supply requirements are addressed in the JSA or Permit for the task being performed. If work is not performed under a JSA or Permit, the following safety equipment is required to be present on site in good condition (Check all that apply):

- | | |
|-------------------------------------------------------|------------------------------------------------------|
| <input checked="" type="checkbox"/> First aid kit | <input checked="" type="checkbox"/> Insect repellent |
| <input type="checkbox"/> Bloodborne pathogens kit | <input checked="" type="checkbox"/> Sunscreen |
| <input checked="" type="checkbox"/> Fire extinguisher | <input type="checkbox"/> Air horn |
| <input type="checkbox"/> Eyewash (ANSI compliant) | <input checked="" type="checkbox"/> Traffic cones |
| <input checked="" type="checkbox"/> Eyewash (bottle) | <input type="checkbox"/> 2-way radios |
| <input checked="" type="checkbox"/> Drinking water | <input type="checkbox"/> Heat stress monitor |
| <input type="checkbox"/> Other: | <input type="checkbox"/> Barricades |
| <u>Flashlight</u> | _____ |
| | _____ |

Behavior Based Safety Program (*check all that apply*)

- ☒ TIP required at the following frequency on this project:
Select One: _____ mhrs 1 time(s) _____ Define: _____
- ☐ H&S Field Assessment required at the following frequency on this project:
Select One: _____ mhrs _____ time(s) _____ Define: _____
- ☐ Other (specify): _____

List tasks anticipated for TIP activity:

NAPL monitoring

Near miss reporting enhances our H&S program. Take the time to enter near misses into 4-Sight.

Signatures

I have read, understand and agree to abide by the requirements presented in this health and safety plan. I understand that I have the absolute right to stop work if I recognize an unsafe condition affecting my work until corrected.

Printed Name	Signature	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Add additional sheets if necessary

- ☐ Subcontractor Acknowledgement Form attached

You have an absolute right to STOP WORK if unsafe conditions exist!

Attachments



STAR Plan



Site Traffic Awareness and Response (STAR) Plan

Revision 3, 9/18/2013

1.0 General

Project Name:	National Grid Rensselaer Non-Owned Former MGP Site
Project Number:	B0036730.0000.00001
STAR Plan Developer Name:	Meghan Kiser
Reviewed By:	Dave Groff
Duration of Work (hours or days):	< 1 hour per monitoring well, 8 hours total
Time Restrictions (describe below):	None
Comments:	
<div></div>	

2.0 Work Description

Provide a brief description of expected site traffic conditions:

The monitoring wells are located within a New York State owned parking lot. Gauging will be conducted in the early-morning or late-afternoon such that field personnel will have access to monitoring wells located within the parking lot portions of the site. Field vehicle and traffic cones will be used to block off the work area at each monitoring well location.

☒ Work is planned on off site properties but not in the public right-of-way.

To facilitate identification of traffic controls to use, check all that apply to this project:

Notes: Time at a specific location on the project site ("> 8 hours at MW-1" etc). Exclude activities such as monitor well pad setting times where equipment is not at location. Indicate controls to protect monitor well pads in comments below.

Short Duration Work (<1 hour)	Intermediate Duration Work (1-8 hours)
<div><input checked="" type="checkbox"/> Water-level gauging and well sounding</div> <div><input type="checkbox"/> Surface soil sampling using manual methods</div> <div><input type="checkbox"/> Intermediate depth soil sampling using DPT</div> <div><input checked="" type="checkbox"/> Shallow monitor well purging and sampling</div> <div><input checked="" type="checkbox"/> Product recovery using manual methods</div> <div><input type="checkbox"/> Surveying</div> <div><input type="checkbox"/> Other (specify): <div></div></div>	<div><input type="checkbox"/> Intermediate/deep or > 2 in. diameter well sampling</div> <div><input type="checkbox"/> Slug testing and similar tests</div> <div><input type="checkbox"/> Deep handauger sampling (>20 ft depth)</div> <div><input type="checkbox"/> Manual soil sampling through concrete/asphalt</div> <div><input type="checkbox"/> Deep soil sampling using DPT (>40 ft depth)</div> <div><input type="checkbox"/> Soil sampling using other automated drilling method</div> <div><input type="checkbox"/> Other (specify): <div></div></div>
Long Duration Work (>8 hours)	Comments:
<div><input type="checkbox"/> Deep monitor well installation (>50 ft depth)</div> <div><input type="checkbox"/> Monitor wells with surface casing installation</div> <div><input type="checkbox"/> Intermediate depth monitor wells ≥ 4 in. diam.</div> <div><input type="checkbox"/> Long term product recovery using equipment</div> <div><input type="checkbox"/> Long term pump testing</div> <div><input type="checkbox"/> Other (specify): <div></div></div>	<div></div> <div>Traffic Type: <i>Check all that apply:</i></div> <div><div><input checked="" type="checkbox"/> Automobiles</div><div><input type="checkbox"/> Forklifts</div><div><input type="checkbox"/> Construction equipment</div><div><input type="checkbox"/> Straight truck</div><div><input checked="" type="checkbox"/> Bicycles</div><div><input type="checkbox"/> Other:</div><div><input type="checkbox"/> Semi truck</div><div><input checked="" type="checkbox"/> Pedestrian</div><div></div></div>

3.0 Traffic Control Layout

The following DOT Fact Sheets and/or diagrams are applicable to this project:

Notes: DOT Fact Sheets have numbered scenarios, select the appropriate scenario(s) for the project and indicate duration [Short (S), Intermediate (I), Long (L)]. Manually revise diagrams, if needed, to convey requirements.

- ☒ [DOT Facts-302a](#) Retail Gas Station/Small Business Parking Lot (<1 Hour)
☒ With Truck ☐ Without Truck
☐ [DOT Facts-302b](#) Retail Gas Station/Small Business Parking Lot (1-8 Hours)
☐ [DOT Facts-302c](#) Retail Gas Station/Small Business (>8 Hours)
☐ [DOT Facts-302e](#) Multi-business Parking Lot
☐ [DOT Facts-302e](#) Facility Parking Area
☐ Parking Garage (develop drawing for controls)
☐ Other (specify): _____
☐ STAR Select controls to the right will be used _____

1 2 3 4 5 6 7 8 9 S I L

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															

How will the above documents be communicated to field staff?

(excludes STAR Select)

- ☒ The above documents are attached to this STAR Plan
☐ The above documents are appropriate without significant modification and are available to field staff in the

[Field Guide for Roadway Work Zone Safety.](#)



4.0 Required Traffic Control Devices and Phasing

Tasks on this project may be implemented both individually or concurrently. Selection and number of traffic control devices required will be dependent on the scope of work.

Traffic control device help:

[DOT Facts-302d](#)

<p><i>Check all that apply:</i></p> <p><input type="checkbox"/> Channelizer cone (42 inch height, 10 lb base)</p> <p><input type="checkbox"/> Channelizer cone (42 inch height, 30 lb base)</p> <p><input checked="" type="checkbox"/> Traffic cones (≥ 18 inches tall)</p> <p><input type="checkbox"/> Barricade <input type="checkbox"/> Type I <input type="checkbox"/> Type II</p> <p><input checked="" type="checkbox"/> Flags for cones</p> <p><input type="checkbox"/> Lights (for night work)</p> <p><input type="checkbox"/> Plastic fencing (rolls)</p> <p><input type="checkbox"/> Caution tape (rolls)</p> <p><input type="checkbox"/> Other (specify): _____</p>	<p>Number:</p> <p>_____</p> <p>_____</p> <p>6</p> <p>_____</p> <p>6</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><i>Phasing:</i></p> <p>1) Position truck as shield, if practical</p> <p>2) Deploy traffic control devices</p> <p>3) Affix flags, caution tape or fencing as prescribed in fact sheet</p> <p>4) Unload project equipment</p> <p>5) Commence work</p> <p>6) SSO to maintain controls</p> <p>7) Remove controls in opposite order</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

- ☐ Additional client requirements are attached

If vehicle equipped with high intensity strobe or rotating lights, the lights should be utilized during work. If the vehicle is not equipped with supplemental lighting devices, use vehicle flashers (be aware of battery drain when using any of the lighting devices) should be considered.

Personal protective equipment required for this work is listed in the applicable project Job Safety Analysis (JSA) or project specific HASP. A Class II (minimum) high visibility vest is required.

5.0 Approvals

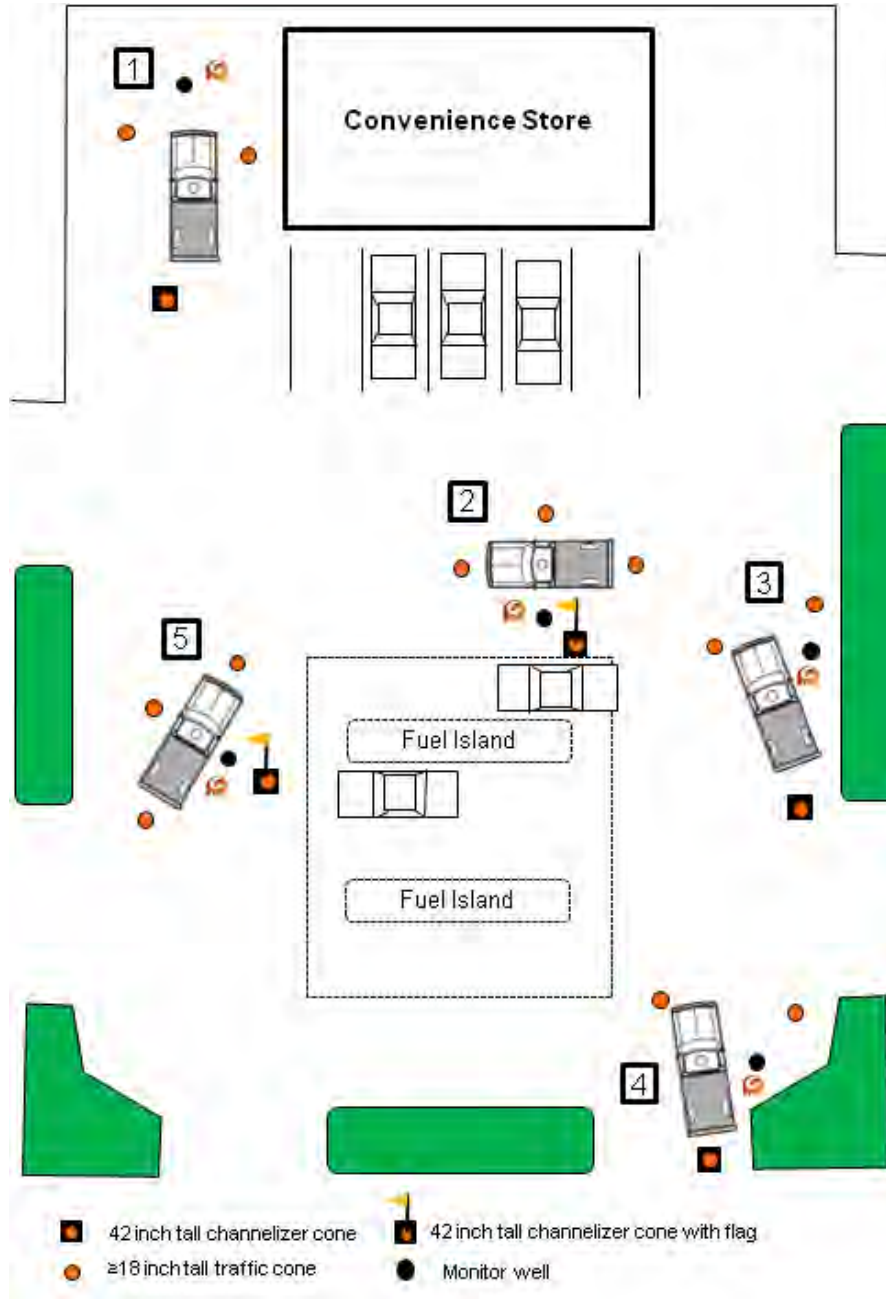
	Printed Name	Date	Signature
Plan Developer:	Meghan Kiser	8/5/2014	
Plan Reviewer:	Dave Groff	8/6/2014	



DOT Facts-302a

Recommended Best Practices for Short Duration Work in Parking Areas (Less than 1 Hour per Location)

The following configurations should be considered for traffic protection in retail parking areas for work durations less than 1 hour.



In all cases, use the vehicle as a shield when possible. All above scenarios utilize concepts of the ARCADIS Cone and Spotter Program (see the Motor Vehicle Safety Program Standard (ARC HSGE-024) for more information.

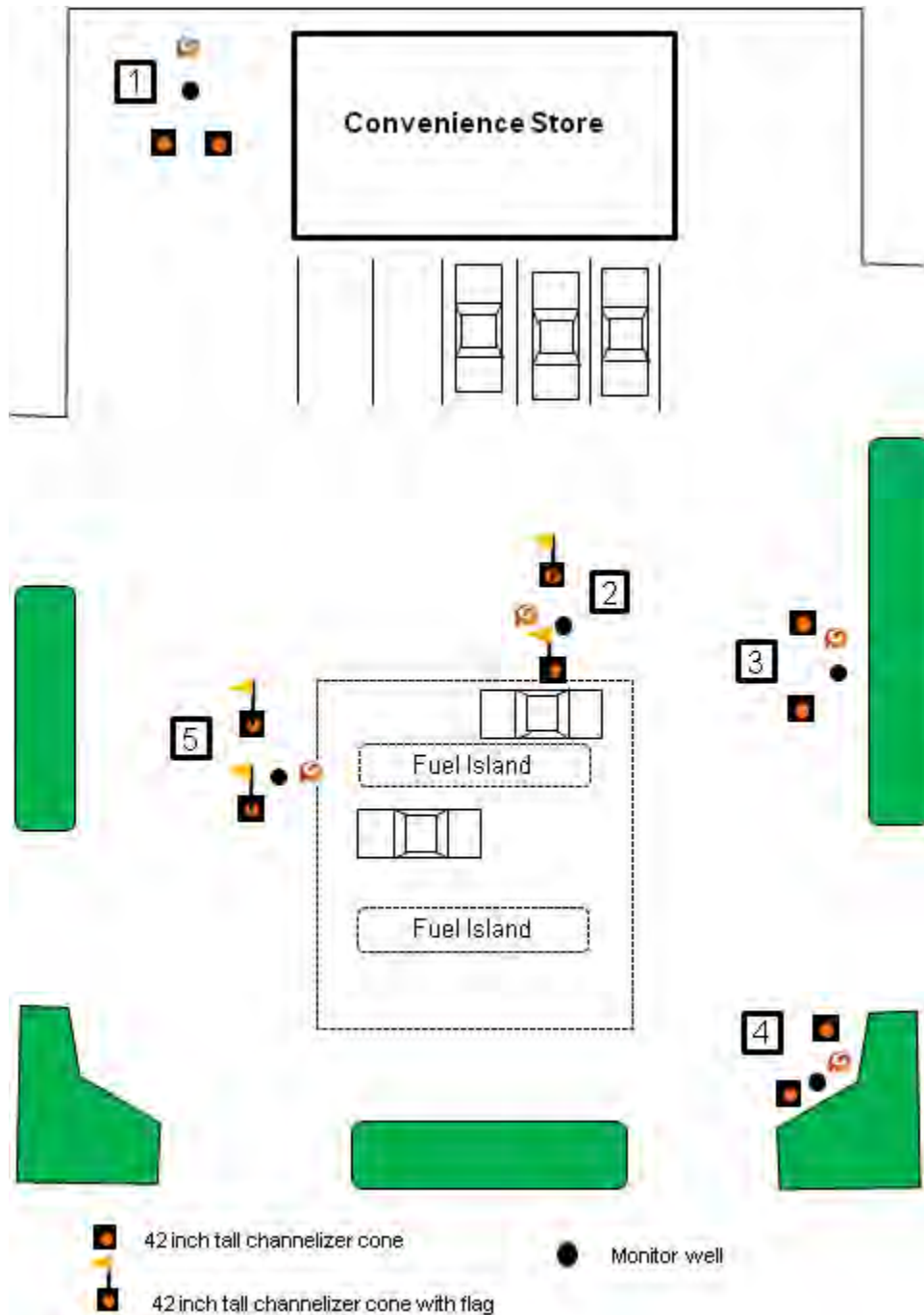
General Guidelines for Safety:

- Always work facing the area with greatest traffic movement and least protection
- Always assume vehicle will move in either direction (frontwards or backwards)
- Always use TRACK to predict traffic movement and stage vehicle in manner that offers protection without impairing site entrance or blocking access to fuel islands, when possible.
- If there is a perceived drivable space or if there is an unused gas pump, you must assume that someone will attempt to access or drive to/through the location. Plan, deploy and work accordingly.
- Class II high visibility vest (minimum) to be worn at all times.
- Discuss with site operator or manager times of lower traffic volume and attempt to schedule work activity during traffic lulls.
- Areas in green above may appear to be site property but may actually be within the roadway right-of-way. Work performed in the right-of-way has additional requirements. See ARC DOT-301 for more information.

Scenario Descriptions:

- 1) The well is in a non-traffic area with low expectation for pedestrian traffic. Stage the vehicle to offer protection from someone who may try to park in the area.
- 2) In this scenario there is high vehicular and pedestrian traffic potential. Use the truck as a shield for vehicles backing out of parking places. Use a 42 inch channelizer cone with a flag on the fuel island side of the work area. Although traffic in the area of fuel island is expected to be low speed, congestion and potential backing may occur at any time causing driver distraction. The use of a flag will aid drivers in larger vehicles to see the area of protection.
- 3) In this scenario, the vehicle acts as a shield against other vehicles that may turn wide accessing the fuel island. The 42 inch channelizer cone should be placed in the area with greatest traffic potential which in this case would be traffic entering the site from the nearby entrance.
- 4) Since the well is near an active entrance, place the vehicle in the entrance and place the 42 inch channelizer cone on the roadway side of the vehicle. Avoid blocking or over restricting site access, to the extent practical.
- 5) Use the vehicle as a shield from traffic entering the site (higher speed traffic) and place the channelizer cone on the fuel pump side of the work area. As with scenario #2, Place a flag to increase visibility and face the fuel islands when working.

On some sites, it may be impractical to move the vehicle from one location to another for short term work. In these situations, use a Spotter to watch for traffic and/or utilize the following scenarios:



General Guidelines for Safety:

- All guidelines above apply to these scenarios.
- Always position yourself near large stationary objects when practical

Scenario Descriptions:

- 1) There is less potential for traffic interference when the work area is on the edge of the site property. However, never assume these locations are completely safe and deploy at least 2 channelizer cones (42 inch) for increased driver awareness of your work area.
- 2) Work locations in areas such as this one are very dangerous since traffic (moving forward or backward) may come from any direction. At a minimum, deploy at least 2 channelizer cones (42 inch) with flags at locations such as this one. Deploy extra channelizer cones with flags in high traffic, congested, and/or limited space sites. Try to use the vehicle a shield locations like this instead of relying solely on cones.
- 3) See scenario #1 above.
- 4) See scenario #1 above.
- 5) Similar to scenario #2, deploy at a minimum 2 channelizer cones (42 inch) with flags, align with and position with back to stationary object (the fuel island itself in this case) to the extent practical.





Job Safety Analyses

Job Safety Analysis

General

JSA ID	11446	Status	(3) Completed
Job Name	Environmental-Groundwater Sampling and free product recovery	Created Date	8/5/2014
Task Description	Monitoring well gauging and NAPL recovery.	Completed Date	08/06/2014
Template	False	Auto Closed	False

Client / Project

Client	NATIONAL GRID
Project Number	B00367300000
Project Name	Rensselaer Non-Owned MGP Site
PIC	YOUNG, TERRY
Project Manager	GOLUBSKI, JASON

User Roles

Role	Employee	Due Date	Completed Date	Supervisor	Active
Developer	Kiser, Meghan	8/20/2014	8/6/2014	Brien, Jason	<input checked="" type="checkbox"/>
HASP Reviewer	Groff, David	8/20/2014	8/6/2014	Cullen, Lucas	<input checked="" type="checkbox"/>

Job Steps

Job Step No.	Job Step Description	Potential Hazard	Critical Action	H&S Reference
1	Proper PPE verification.	1 Lack of adequate PPE on site.	Wear proper PPE including safety boots, knee pads and safety glasses and wear chemical protective gloves when gauging.	H&S Standard: Section III/E: General H&S Rules
2	Stage at site and set up work zone and gauging equipment.	1 Personnel could be hit by vehicular traffic causing bodily harm.	Communicate work activity in the morning/afternoon safety meeting. Do not use cell phone in active work zone. Establish Traffic Control for Exclusion Zone and use high-visibility cones. Park vehicle as barrier if feasible. Wear class II traffic vest to increase pedestrian visibility to other drivers. Unload as close to work area as safely possible. Be aware of work trucks in the area. Give them the right of way at all times.	H&S Standard: Section III, Subsection G #3: Work Zones
		2 Broken bones/lacerations from tripping over gauging equipment, tools and monitoring well covers.	Keep sampling equipment organized and staged in one central location to prevent tripping hazards. Store equipment with sharp edges protected. Wear Type II cut-resistant gloves to protect hands from lacerations from potential fall. Wear steel-toed puncture resistant work boots to protect feet from debris on the ground.	
		3 Muscle strain from lifting sampling equipment	Unload as close to work area as safely possible. Use a two person lift for loads greater than 50 pounds. Lift using legs and straight back. Limit twisting motions during lifting procedures. Do not carry more weight than you can handle. Plan route before lift and keep route clear.	
		4 Crushed/broken toes from dropping equipment	Wipe off equipment, decreasing the possibility of losing grip. Carry small loads and wear steel toed boots to prevent crushing injuries/broken bones.	
		5 Broken bones/lacerations from slipping in wet or muddy work area	Do not walk in slippery areas and use high ground when possible. If activity cannot be avoided in muddy areas and utilize a walking stick for probing and balance to prevent twisting ankle or struck-by injury. Walk slowly, plan steps and route.	
3	Open wells to conduct gauging.	1 Respiratory irritation from vapor/gas inhalation	Keep face clear of well head and work upwind of wellhead, if feasible. Report any noticeable vapors to supervisor. Conduct air monitoring using meter prescribed by HASP.	H&S Standard: Section III/E: General H&S Rules

3	Open wells to conduct gauging.	2	Pinchpoints on well covers and casings can pinch or lacerate fingers.	Identify pinch points associated with well lid, do not place hands in these areas. When possible, keep hands 6 inches away from pinch points and sharp edges to prevent cuts. Use the right tools for the job (e.g., use a socket wrench that matches bolt size to open well vault/cap, do not use screwdriver as a mallet or a pry bar). Wear Type II cut-resistant gloves when removing well vault lids to prevent cuts due to sharp edges.	
		3	Insect bites, skin irritation, or allergic reaction from Bites/stings from insects inside well housing	Visually check for insects prior to opening the well. Wear insect repellent if known or suspect insect area. Have insect spray available to kill wasps/bees. If known allergies to bees or insect bites, have epi-pen available. Wear long sleeves and pants to prevent insect bites.	
		4	Dermal or eye irritation from contact with well water	Open well casings and lids slowly to relieve any possible pressure under lids. Face away from well and do not touch condensation on lids. If lid sputters with any built-up vapor pressure, release lid slowly until sputtering stops. Wear long sleeves, safety glasses, and nitrile gloves over Type II cut-resistant gloves while opening well lids to prevent dermal or eye irritation.	
		5	Cuts and laceration on knee during gauging	Do not kneel on hard surfaces, squat if possible. If kneeling is unavoidable, wear knee pads or place kneeling pad on ground to prevent injury to knee.	
		6	Concussion or bodily injury from well cap or plug under potential pressure.	If pressure relief valves are on well, release pressure prior to opening well. Open well cap or plug at an angle away from body. Keep face 2 feet clear of wellhead while opening. Wear safety glasses to protect eyes and a hard hat to protect head.	
4	Conduct gauging of wells	1	Broken bones/lacerations from slip/trips/falls on measuring tape.	Always place tape out of the walking path to prevent trip hazard. If tape cannot be placed out of the way, mark it out with cones. Wear Type II cut-resistant gloves to protect hands from lacerations and falls.	H&S Standard: Section III/E: General H&S Rules
		2	Skin irritation from contact with groundwater.	Lower and retract tape slowly to reduce the potential for splashing. Wear Nitrile gloves over Level II cut-resistant gloves to prevent hand injury and skin irritation. If there is a potential for splashing, wear goggles to protect eyes.	
5	Recovery of Free Product from well.	1	Respiratory irritation from vapor/gas inhalation.	Keep face clear of wellhead and work upwind of wellhead, if feasible. Report any noticeable vapors to site supervisor. STOP WORK IMMEDIATELY and contact site supervisor if vapors/gas are noticed or conditions change.	H&S Standard: Section III/E: General H&S Rules
		2	Working with bailer rope can cause rope burns on hands.	Slowly raise and lower the rope or string for the bailer. Do not wrap rope or string around hand/fingers. Wear appropriate gloves for the task.	
		3	Back strain while bailing wells.	If a well needs to be bailed, lift with legs keeping back straight.	
		4	Eye irritation from exposure to free product on face or body.	Identify location of saline bottle prior to conducting work. Raise and lower the bailer slowly to eliminate splashing liquids. If strong winds are creating a splash hazard, work with back to the wind. Empty bailer slowly.	
		5	Dermal irritation from exposure to free product.	Do not touch contaminated groundwater. Wear nitrile gloves over Type II cut-resistant gloves to prevent particulates/liquids from contacting hands and causing irritation.	

6	Staging of recovered free product.	1	Pinching injuries can occur when opening drum to store recovered free product.	Wear proper PPE (leather gloves) when opening drums.	H&S Standard: Section III/E: General H&S Rules
---	------------------------------------	---	--------------------------------------------------------------------------------	------------------------------------------------------	------------------------------------------------------

PPE Personal Protective Equipment			
Type	Personal Protective Equipment	Description	Required
Dermal Protection	long sleeve shirt/pants		Recommended
Eye Protection	safety glasses		Required
Foot Protection	steel-toe boots		Required
Hand Protection	chemical resistant gloves (specify type)	Nitrile	Required
	work gloves (specify type)	Leather	Required
Head Protection	hard hat		Required
Miscellaneous PPE	traffic vest--Class II or III	Class II	Required

Supplies			
Type	Supply	Description	Required
Communication Devices	mobile phone		Required
Decontamination	Decon supplies (specify type)	Alconox, DI water, spray bottle	Required
Miscellaneous	fire extinguisher		Required
	first aid kit		Required
	flashlight		Required
Personal	eye wash (specify type)	Saline	Required
	insect repellent		Recommended
	sunscreen		Recommended
	water/fluid replacement		Required
Traffic Control	barricades		Recommended
	traffic cones		Required

Review Comments		
Reviewer		Comments
Employee: Role Review Type Completed Date	Groff, David HASP Reviewer Approve 8/6/2014	



Material Safety Data Sheets

Safety Data Sheet

according to 1907/2006/EC (REACH),
1272/2008/EC (CLP), and GHS

Printing date 25.05.2012

Revision: 24.05.2012

1 Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** **ALCONOX**
- **Application of the substance / the preparation** Cleaning material/ Detergent
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
Alconox, Inc.
30 Glenn St., Suite 309
White Plains, NY 10603
Phone: 914-948-4040
- **Further information obtainable from:** Product Safety Department
- **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585



2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R38-41: Irritating to skin. Risk of serious damage to eyes.

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

- **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

- **2.2 Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**



GHS05

- **Signal word** Danger

- **Hazard-determining components of labelling:**

Benzenesulfonic Acid, Sodium Salts

(Contd. on page 2)

Safety Data Sheet

according to 1907/2006/EC (REACH),
1272/2008/EC (CLP), and GHS

Printing date 25.05.2012

Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 1)

Hazard statements

H315 Causes skin irritation.

H318 Causes serious eye damage.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P264 Wash thoroughly after handling.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

P321 Specific treatment (see on this label).

P362 Take off contaminated clothing and wash before reuse.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

Hazard description:**WHMIS-symbols:**

D2B - Toxic material causing other toxic effects

**NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1

Fire = 0

Reactivity = 0

2.3 Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

3.2 Mixtures**Description:** Mixture of substances listed below with nonhazardous additions.**Dangerous components:**

CAS: 68081-81-2	Benzenesulfonic Acid, Sodium Salts Xi R38-41 Eye Dam. 1, H318 Skin Irrit. 2, H315	10-25%
CAS: 497-19-8 EINECS: 207-838-8 Index number: 011-005-00-2	sodium carbonate Xi R36 Eye Irrit. 2, H319	2,5-10%

(Contd. on page 3)

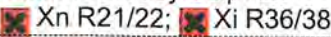
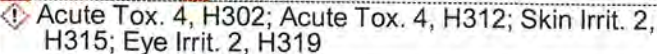
Safety Data Sheet

according to 1907/2006/EC (REACH),
1272/2008/EC (CLP), and GHS

Printing date 25.05.2012

Revision: 24.05.2012

Trade name: ALCONOX

(Contd. of page 2)		
CAS: 7722-88-5 EINECS: 231-767-1	tetrasodium pyrophosphate substance with a Community workplace exposure limit	2,5-10%
CAS: 151-21-3 EINECS: 205-788-1	sodium dodecyl sulphate  	2,5-10%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

· 4.1 Description of first aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn.

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

· 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

· 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Firefighting measures

· 5.1 Extinguishing media

· **Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· 5.2 Special hazards arising from the substance or mixture

No further relevant information available.

· 5.3 Advice for firefighters

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Product forms slippery surface when combined with water.

· 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Clean the affected area carefully; suitable cleaners are:

Warm water

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

- **7.1 Precautions for safe handling**
Prevent formation of dust.
Keep receptacles tightly sealed.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Protect from humidity and water.
- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

7722-88-5 tetrasodium pyrophosphate

REL (USA)	5 mg/m ³
TLV (USA)	TLV withdrawn
EV (Canada)	5 mg/m ³

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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- **Material of gloves**

Butyl rubber, BR
Nitrile rubber, NBR
Natural rubber, NR
Neoprene gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

9 Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Powder
Colour:	White
Odour:	Odourless
Odour threshold:	Not determined.

pH-value (10 g/l) at 20°C:	9,5 (- NA for Powder form)
----------------------------	----------------------------

- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

Flash point:	Not applicable.
--------------	-----------------

Flammability (solid, gaseous):	Not determined.
--------------------------------	-----------------

- **Ignition temperature:**

Decomposition temperature:	Not determined.
----------------------------	-----------------

Self-igniting:	Product is not selfigniting.
----------------	------------------------------

Danger of explosion:	Product does not present an explosion hazard.
----------------------	-----------------------------------------------

- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

Vapour pressure:	Not applicable.
------------------	-----------------

Density at 20°C:	1,1 g/cm ³
Relative density	Not determined.
Vapour density	Not applicable.

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· Evaporation rate	Not applicable.
· Solubility in / Miscibility with water:	Soluble.
· Segregation coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	0,0 %
· Solids content:	100 %
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Reacts with acids.
Reacts with strong alkali.
Reacts with strong oxidizing agents.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Phosphorus compounds
Sulphur oxides (SO_x)

11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** Not worth-mentioning accumulating in organisms
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

13 Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Smaller quantities can be disposed of with household waste.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.
The surfactant used in this product complies with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

- | | |
|------------------------------------------|-----|
| · 14.1 UN-Number | |
| · DOT, ADR, ADN, IMDG, IATA | N/A |
| · 14.2 UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | N/A |
| · 14.3 Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | N/A |
| · 14.4 Packing group | |
| · DOT, ADR, IMDG, IATA | N/A |
| · 14.5 Environmental hazards: | |
| · Marine pollutant: | No |

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- | | |
|---------------------------------------------------------------------------------------|-----------------|
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · UN "Model Regulation": | N/A |

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

- **United States (USA)**
- **SARA**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Proposition 65 (California):**

- **Chemicals known to cause cancer:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic Categories**

- **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Canada**

- **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

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Canadian Ingredient Disclosure list (limit 1%)

497-19-8	sodium carbonate
7722-88-5	tetrasodium pyrophosphate
151-21-3	sodium dodecyl sulphate

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

H302 Harmful if swallowed.
 H312 Harmful in contact with skin.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.

R21/22 Harmful in contact with skin and if swallowed.

R36 Irritating to eyes.

R36/38 Irritating to eyes and skin.

R38 Irritating to skin.

R41 Risk of serious damage to eyes.

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

GAS INNOVATIONS

MATERIAL SAFETY DATA SHEET (MSDS)

ISOBUTYLENE

PRODUCT IDENTIFICATION

▪D.O.T. SHIPPING NAME	Isobutylene
▪SYNONYM (S)	Liquefied Petroleum Gas, Isobutene, 2 Methylpropene
▪D.O.T. I.D. NUMBER	UN-1055
▪D.O.T. HAZZARD CLASS	2.1 Flammable Gas
▪D.O.T. LABEL (S)	Flammable Gas
▪C.A.S. NUMBER	115-11-7
▪CHEMICAL FORMULA	C ₄ H ₈ or (CH ₃) ₂ C:CH ₂

PHYSICAL DATA

▪MOLECULAR WEIGHT	56.108
▪FREEZING POINT	-140.4°C, -220.6°F
▪BOILING POINT	-6.9°C, 19.6°F
▪VAPOR PRESSURE	168 kPa (gauge), 24.3 psig @21.1°C
▪SPECIFIC VOLUME	0.418m ³ /kg, 6.7 ft ³ /lb @ 1 atm, 21.1°C
▪RELATIVE DENSITY, (air=1)	1.947 @ 1 atm, 25°C
▪SOLUBILITY IN WATER	Negligible
▪DESCRIPTION	At room temperature and atmospheric pressure isobutene is a colorless, flammable gas, with an unpleasant odor. It is shipped as a liquefied gas under its own vapor pressure.

FIRE AND EXPLOSION HAZARD DATA

▪FLAMMABLE LIMITS IN AIR	1.8 – 9.6 % by volume
▪AUTO-IGNITION TEMPERATURE	465°C, 869°F
▪FIRE FIGHTING PROCEDURES	The only safe way to extinguish an isobutylene fire is to stop the flow of gas. If the flow cannot be stopped, let the fire burn out while cooling the cylinder and the surroundings using a water spray. Personnel may have to wear approach type protective suits and positive pressure self-contained breathing apparatus. Firefighters' turnout gear may be inadequate. Small secondary fires may be brought under control by using carbon dioxide or a dry chemical fire extinguisher and stopping the flow.

Date prepared: September 7, 2007

▪ UNUSUAL HAZARDS

1. Cylinders exposed to fire may rupture with violent force. Extinguish surrounding fire and keep cylinders cool by applying water from a maximum possible distance with a water spray.
2. Flammable gases may spread from a spill after the fire is extinguished and be subject to re-ignition.

**HEALTH
HAZARD DATA**

▪ PERMISSIBLE EXPOSURE
LIMITS
▪ ACCUTE EFFECTS
OVEREXPOSURE

OSHA TWA None established.

ASGIH TWA None established.

Isobutylene is a simple asphyxiant.

Inhalation of high concentrations may cause rapid respiration, dizziness, fatigue, and nausea. Massive exposure may cause unconsciousness and death. Contact with the liquid phase or with the cold has escaping from a cylinder may cause frostbite.

▪ CHRONIC EFFECTS
OF OVEREXPOSURE

None known.

**FIRST AID
INFORMATION**

▪ INHALATION

Move victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician.

▪ CONTACT

Treat for frostbite.

**REACTIVITY
DATE**

▪ STABILITY
▪ INCOMPATIBILITY
▪ HAZARDOUS
DECOMPOSITION/
OXIDATION PRODUCTS
▪ POLYMERIZATION

(X) Stable. () Unstable.

Oxidizing materials and compounds that can add across double bonds.

Carbon monoxide, carbon dioxide.

(X) Will not occur () May occur

**SPILL OR
LEAKAGE
PROCEDURE**

Shut off all ignition sources and ventilate the area. For controlling large flow, personnel may have to wear approach-type protective suits and positive pressure self-contained breathing apparatus.

Date prepared: September 7, 2007

PRECAUTIONS

- STORAGE RECOMMENDATIONS

Cylinders should be stored and used in dry, cool, well-ventilated areas away from sources of heat or ignition. Do not store with oxidizers

- PERSONAL PROTECTIVE EQUIPMENT

1. Eye protection – Safety glasses should be worn.
2. Respiratory protection – Approved respiratory equipment must be worn when airborne concentrations exceed safe levels.
2. Skin protection – No specific equipment is required. Gloves are recommended for cylinder handling.

- BEFORE USING THE GAS

1. Secure the cylinder to prevent it from falling or being Knocked over.
 2. Leak check the lines and equipment.
 3. Have an emergency plan covering steps to be taken in the event of an accidental release.
-

DISCLAIMER

The information, recommendations, and suggestions herein were compiled from reference material and other sources believed to be reliable. However, the MSDS's accuracy or completeness is not guaranteed by Gas Innovations or its affiliates, nor is any responsibility assumed or implied for any loss or damage resulting from inaccuracies or omissions. Since conditions of use are beyond our control, no warranties of merchantability or fitness for a particular purpose are expressed or implied. This MSDS is not intended as a license to operate under, or recommendation to infringe on, any patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

Date prepared: September 7, 2007



HASP Forms

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name:			Project Location:
Date:	Time:	Conducted by:	Signature/Title:
Client:		Client Contact:	Subcontractor companies:

TRACKing the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

1 _____	3 _____	5 _____
2 _____	4 _____	6 _____

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations ☐

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

Doc #

Doc #

<input type="checkbox"/> Not applicable <u>Doc #</u>	<input type="checkbox"/> Working at Height _____	<input type="checkbox"/> Confined Space _____
<input type="checkbox"/> Energy Isolation (LOTO) _____	<input type="checkbox"/> Excavation/Trenching _____	<input type="checkbox"/> Hot Work _____
<input type="checkbox"/> Mechanical Lifting Ops _____	<input type="checkbox"/> Overhead & Buried Utilities _____	<input type="checkbox"/> Other permit _____

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input type="checkbox"/> JLAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JLAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input type="checkbox"/> Staff has appropriate PPE?	<input type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess** the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M H)	<input type="checkbox"/> Motion (i.e., traffic, moving water) (L M H)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M H)	<input type="checkbox"/> Environment (i.e., heat, cold, ice) (L M H)
<input type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H)	<input type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M H)	<input type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M H)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input type="checkbox"/> Personal (i.e. alone, night, not fit) (L M H)	<input type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M H)

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JLAs, and other control processes. Discuss and document any additional control processes.

☒ **STOP WORK AUTHORITY** (Must be addressed in every Tailgate meeting - (See statements below)

<input type="checkbox"/> Elimination <input type="checkbox"/> Engineering controls <input type="checkbox"/> General PPE Usage <input type="checkbox"/> Personal Hygiene <input type="checkbox"/> Emergency Action Plan (EAP) <input type="checkbox"/> JLA to be developed/used (<u>specify</u>) <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> Substitution <input type="checkbox"/> Administrative controls <input type="checkbox"/> Hearing Conservation <input type="checkbox"/> Exposure Guidelines <input type="checkbox"/> Fall Protection <input type="checkbox"/> LPO conducted (<u>specify job/JLA</u>) <input type="checkbox"/> _____ <input type="checkbox"/> _____	<input type="checkbox"/> Isolation <input type="checkbox"/> Monitoring <input type="checkbox"/> Respiratory Protection <input type="checkbox"/> Decon Procedures <input type="checkbox"/> Work Zones/Site Control <input type="checkbox"/> Traffic Control <input type="checkbox"/> Other (<u>specify</u>) <input type="checkbox"/> _____ <input type="checkbox"/> _____
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP

Important Information and Numbers	Visitor Name/Co - not involved in work	I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.																
All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns. In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844. In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756. In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500	<table style="width: 100%;"> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> </table>	In	Out			In	Out			In	Out			In	Out			I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments. If it is necessary to STOP THE JOB , I will perform TRACK ; and then amend the hazard assessments or the HASP as needed. I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.
In	Out																	
In	Out																	
In	Out																	
In	Out																	

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

<input type="checkbox"/>	Lessons learned and best practices learned today:	_____
<input type="checkbox"/>	Incidents that occurred today:	_____
<input type="checkbox"/>	Any Stop Work interventions today?	_____
<input type="checkbox"/>	Corrective/Preventive Actions needed for future work:	_____
<input type="checkbox"/>	Any other H&S issues:	_____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155
Near Loss Hotline - 1.866.242.4304

Real Time Exposure Monitoring Data Collection Form

Document all air monitoring conducted on the Site below. Keep this form with the project file.

Site Name: _____ Date: _____

Instrument: _____ Model: _____ Serial #: _____

Calibration Method: (Material used settings, etc.)	
Calibration Results:	
Calibrated By:	

Activity Being Monitored	Compounds/Hazards Monitored	Time	Reading	Action Required? Y/N

Describe Any Actions Taken as a Result of this Air Monitoring and Why (does it match Table 5-1):

Employee Signature Form

I certify that I have read, understand, and will abide by the safety requirements outlined in this HASP.

[illegible]

Subcontractor Acknowledgement: Receipt of HASP Signature Form

ARCADIS claims no responsibility for the use of this HASP by others although subcontractors working at the site may use this HASP as a guidance document. In any event, ARCADIS does not guarantee the health and/or safety of any person entering this site. Strict adherence to the health and safety guidelines provided herein will reduce, but not eliminate, the potential for injury at this site. To this end, health and safety becomes the inherent responsibility of personnel working at the site.

[illegible]

Visitor Acknowledgement and Acceptance of HASP Signature Form

By signing below, I waive, release and discharge the owner of the site and ARCADIS and their employees from any future claims for bodily and personal injuries which may result from my presence at, entering, or leaving the site and in any way arising from or related to any and all known and unknown conditions on the site.

[illegible]

Hazardous Materials Transportation Form

	Vehicle (place X in box)	Type (pick-up, car, box truck, etc.)
Personal		
Rental		
ARCADIS owned/leased		
Government owned		
Trailer		
Materials Transported	Quantity	Storage/Transport Container

List Trained Drivers:

Hazardous Materials Shipment Form

Material Description and Proper Shipping Name (per DOT or IATA)	Shipment Quantity	DOT Hazard Classification	Shipment Method (air/ground)

List Shipper (i.e., who we are offering the shipment to):

List Trained Employee(s):

ARCADIS UTILITY AND STRUCTURES CHECKLIST

Project: RG&E Front Street
Project Number: B0007453.0020.00042
Date: 8/4/2014

Work locations applicable to this clearance checklist (**Photo Document Work Locations**):

THIS FORM MUST BE COMPLETED IN ENTIRETY PRIOR TO BEGINNING ANY INTRUSIVE WORK

Pre-Field Work

One Call or "811" notified 48-72 hours in advance of work? ☐ Yes ☐ No
Utility companies notified during the One Call process ☐ See attached ticket

List any other utilities requiring notification: ☐ None

Private Locator Contacted ☐ Yes ☐ No

Plan private utility clearance subcontractor assignments, areas, required clearance equipment, depth of clearance needed, types of utilities

Client provided utility maps or "as built" drawings showing utilities? Yes ☐ No

Field Work - This must be completed on site, by staff who have a minimum of one year of field experience in identifying utilities

Lines of Evidence - Must have **3 Reliable Lines of Evidence** Prior to Starting any Intrusive Work

☐ One Call/"811"
Utility Markings Present: ☐ Paint ☐ Pin flags/stakes ☐ Other ☐ None
☐ Client Provided Maps/Drawings **OR** ☐ Maps/Drawings requested but not provided
☐ Client Clearance Name(s)/Affiliation(s) _____
☐ Interview(s): Name(s)/Affiliation(s) _____

Did person(s) interviewed indicate depths of any utilities in the subsurface?

☐ Yes, depths provided:
☐ Did not know or refused to answer

Additional Comments:

☐ Site Inspection & Complete Site Sketch (**Photo Document Marked Utilities & Utility Structures**)

☐ GPR

☐ Air-Knife

☐ Hydro-Knife

☐ Public Records/Maps

☐ Radiofrequency

☐ Metal Detector

☐ Handauger

☐ Potholing

☐ Probing

☐ Private Locator:

☐ Marine Locator:

☐ Other:

Tips for Successful Utility Location:

1. Don't forget to look up
2. Be on site when utilizing private utility locators
3. Select alternate/backup locations during clearance process
4. **Mark out all known utilities. Leave nothing to question**
5. No hammering- no pickaxes-no digging bars-no hurrying or shortcutting
6. No excessive turning or downward force of handaugers/shovels, etc.
7. Utilities may run directly under asphalt/concrete or be > 5 ft. in depth

Name and Company: _____

Name and Company: _____

T R A C K

Site Inspection

During the site inspection look for the following ("YES" requires additional investigation and must be marked properly prior to performing intrusive work):

		Utility Color Codes		
a)	Natural gas line present (evidence of a gas meter)?	Yellow	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b)	Evidence of electric lines:	Red		
	i) Conduits to ground from electric meter or along wall?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Light poles, electric devices with no overhead lines?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Overhead electric lines present?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
c)	Evidence of sewer drains:	Green		
	i) Restrooms or kitchen on site?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Sewer cleanouts present?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Combined sewer /storm lines or multiple sewer lines?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
d)	Evidence of water lines:	Blue		
	i) Water meter on site or multiple water lines?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Fire hydrants in vicinity of work?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Irrigation systems? (Sprinkler heads, valve boxes, controls in building)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
e)	Evidence of storm drains:	Green		
	i) Open curbside or slotted grate storm drains		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Gutter down spouts going into ground		<input type="checkbox"/> Yes	<input type="checkbox"/> No
f)	Evidence of telecommunication lines:	Orange		
	i) Fiber optic warning signs in areas?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Lines from cable boxes running into ground?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Conduits from power poles running into ground?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iv) Aboveground boxes or housings or wires in work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
g)	Underground storage tanks:			
	i) Tank pit present?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Product lines running to dispensers/buildings?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Vent present away from tank pit?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
h)	Do utilities enter or exit existing structures/buildings?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	If Yes, confirm the utility markings outside of structure/building match up.			
i)	Proposed excavation marked in white?	White	<input type="checkbox"/> Yes	<input type="checkbox"/> No
j)	Overhead Utilities/Communication Lines Look Up:			
	i) Overhead electrical conduit, pipe chases, cable trays ?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Overhead fire sprinkler system?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Other overhead lines/utilities, product lines, AC condenser lines?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
k)	Aboveground Power lines in or near the work area:			
	i) < 50 kV within 10 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) >50 - 200 kV within 15 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) >200-350 kV within 20 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iv) >350-500 kV within 25 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	v) >500-750 kV within 35 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	vi) >750-1000 kV within 45 ft. of work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
l)	Other:			
	i) Evidence of linear asphalt or concrete repair?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	ii) Evidence of linear ground subsidence or change in vegetation?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iii) Unmarked manholes or valve covers in work area?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	iv) Warning signs ("Call Before you Dig", etc.) on or adjacent to site?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
	v) Utility color markings not illustrated in this checklist?		<input type="checkbox"/> Yes	<input type="checkbox"/> No

Do not initiate intrusive work if utilities are suspected to be present in area and are not located, if markings are over 14 days old, or if clearance methods provide incomplete or conflicting information. Do not perform intrusive work within 30 inches of a utility marking without receiving pre-approval by Corporate H&S .

Name and Signature of person completing the checklist: _____
 Date: _____

ARCADIS Weekly Vehicle Inspection Form

Vehicle # / License Plate #

Lease Plan # / Last 6 of Vin #

Inspection Date													
Odometer reading													
Driver / Inspector Name													
<i>Check the appropriate box and enter repair date for identified repairs:</i>		OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date	OK	Needs Repair	Repair Date
Interior	Horn operational												
	Door Locks operational												
	Seat Belts in good repair												
	Seats and Seating Controls												
	Steering Wheel - No Excessive Play												
	Interior Lights and Light Controls												
	Instrument Panel/Gauges												
	Wiper Controls operational												
	Heat/Defrost/Air Conditioning working												
	Rear View Mirror present												
	Backup Camera/Sensors working												
	Jack and Lug Wrench present												
Exterior¹	Lights and Signals operational												
	Tires properly inflated/good tread depth												
	Spare Tire properly inflated												
	Doors operational												
	Windows Not Cracked/Damaged												
	Side View Mirrors												
Engine & Brakes	Body Panels and Bumpers												
	Engine Start & Running Smoothly												
	Fluid Levels, No Noticeable Leaks												
	Belts tight, no cracks												
Emergency Equipment²	Brakes operational, no squeaking												
	First Aid Kit, inspected weekly												
	Fire Extinguisher properly secured												
	Fire Extinguisher inspected weekly												
	Orange/Yellow emergency warning light												
	Roadside Assistance Information												
Cargo	Recommend spotter cones available												
	Cargo Secure and Properly Distributed												
Registration	Securing Devices in Good Condition												
	License Plate /Tags												
	Registration and Insurance												
	City/State Inspection Decal												
	Lease Plan information/Fuel Card												

¹ Note all damages to the vehicle on the back of this page

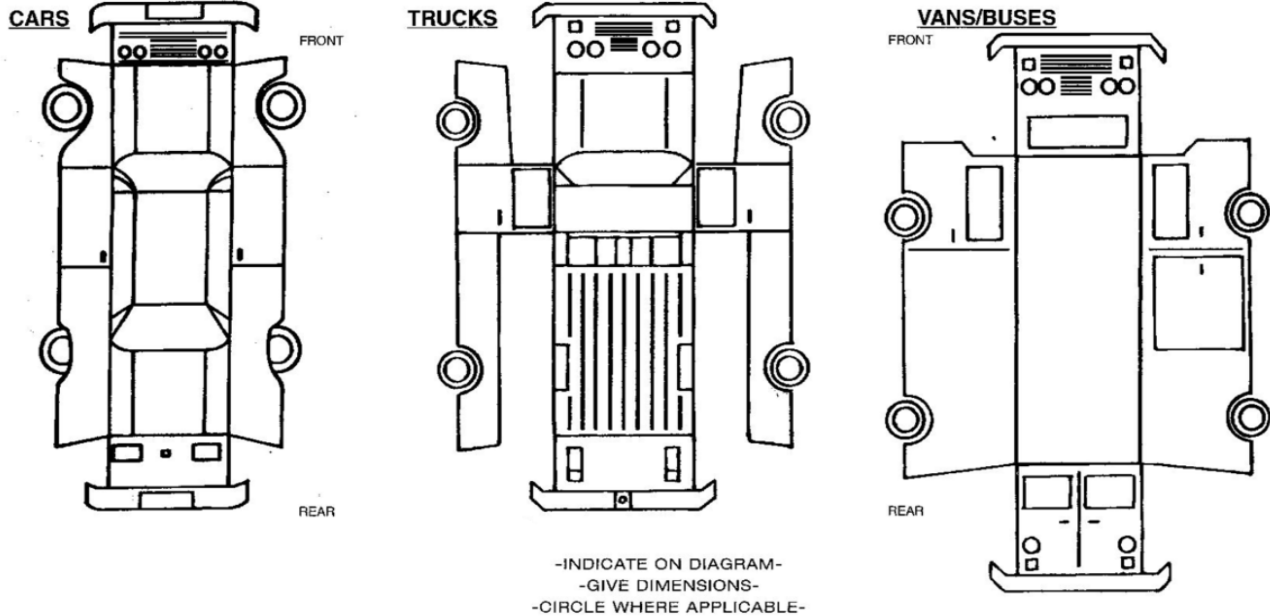
² Emergency Equipment required per Motor Vehicle Standard ARC HSGE024

Note All Vehicle Damage Below

All Vehicle Damage must be reported to Sue Berndt (Corporate Legal), Andrew McDonald (Corporate H&S), and Roger Elliot (Corporate Fleet Manger)

CODES:

B-BENT BR-BROKEN BU-BULGE C-CHAFED CH-CHIPPED	CPM-COVERED WITH PROTECTIVE MATERIAL-UNABLE TO DETERMINE DEFECTS IF ANY CSA-CHAFED AND SCRATCHED ALL OVER CR-CRACKED D-DENTED	DMC-DUST AND MUD COVERED UNABLE TO DETERMINE OTHER DEFECTS IF ANY G-GOUGED OR CUT GC-GLASS CRACKED HS-HAIRLINE SCRATCH M-MISSING	P-PUNCTURED R-RUSTY S-SCRATCHED SC-SCRAPPED SM-SMASHED ST-STAINED AND/OR SOILED T-TORN
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Notes:

Tread guide: If a tread gauge is not available coins may be used to determine remaining tread. 2/32" is the minimum by law in most states (top of Lincoln's head on penny), 4/32" is minimum recommended for wet surfaces (top of Washington's head on quarter), 6/32" is minimum recommended for snowy surfaces (top of Lincoln Memorial on penny). Vehicle tires should be replaced if the tread depth is less than 6/32".



2/32" remaining 4/32" remaining 6/32" remaining

Reference JSA 10907 For Weekly Vehicle Inspection