APPENDIX N (continued)
Health and Safety Log

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** Nov 7
Location: Gas Works Park 1901 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Chuck Ayer		
3	Robert Reynolds		
4	Trent Jesser	WYSER	
5	Alejandro Ruiz		
6	Pablo A. Ortiz	WYSER	
8			
	Conducted By:		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** Nov 10
Location: Gas Works Park 1901 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1			
2	Pablo A-Quiroz	WYSER	
3	Alejandro Quiroz		
4	Ignacio Quiroz		Ignacio Quiroz
5	Spencer White		
6	Trent Tesser	WYSER	
	Chuck Hatchett		
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** Nov 11 2017
Location: Gas Works Park [illegible]01 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor____________________ Phone:________________

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ ________________
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐________________

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE________________________________

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ ____________________
Other ________________________________

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Dan Strasburg		[illegible]
2	Pablo A. Quiroz	Wyser	[illegible]
3	Alejandro Quiroz [illegible]		[illegible]
4	Ignacio Quiroz		Ignacio Quiroz
5	[illegible]	Wyser	[illegible]
6	Spencer White		[illegible]
	Traci Vernon	Wyser	[illegible]
8	Chuck [illegible]		[illegible]
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** Nov 12 2014
Location: Gas Works Park 1901 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	DAVID STEINBERG		
2	Pablo H. Quiroz	WYSER	
3	Alejandro Quiroz Jr		
4	Ignacio Quiroz		
5	[illegible]	WYSER	
6	Spencer White		
7	Trent Tesmer	WYSER	
8	[illegible]		
Conducted By:	[illegible]		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 7/13/14
Location: Gas Works Park 1901 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Chuck Axtell		
3	Tomas Quiroz		
4	Robert Kempers		
5	Trent Varner	Wyser	
6	Alejandro Quiroz		
7	Pablo A Quiroz	WYSER	
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/14/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor DAN REYNOLDS Phone: 206 510 0672

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
SOD INSTALL	CUTTING	GLOVES

ATTENDEES

	Printed Name	Company/Agency	Signature
1	DAVID STEDSBURG	WYSER	
2	Pablo M. Quiroz	WYSER	
3	Ignacio Quiroz		Ignacio Quiroz
4	Alejandro Quiroz		
5	Robert Reynolds		
6			
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING

Client: Puget Sound Energy | **Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394 | **Date**: 11-17-14

Location: Gas Works Park
1801 N. Northlake Way Seattle 98103 | backfill, compact with structural fill & topsoil to match existing grade. Install

Emergency Procedures: For Fire, Police or Medical Emergency CALL 911 - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director** –

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor________________

Chemical Hazards: Fuels☐
MSDSs Available in Field Office X Truck ☐ Main Office ☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☐ Slip/Trip/Falls ☐ Excavation/Trenching ☐

Small Equipment

Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection

Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐

Daily Activity Hazard Analysis - Safe Plan of Action

	Potential Hazards	Safe Plan of Action
Small Equip.	Eye Contact	–

ATTENDEES

	Company/Agency	Signature
Trent Jesmer	Wyser	[signature]
Scott Whit		[signature]
Chuck [illegible]		[signature]
8		
Conducted By:		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11-18-14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches. backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor Dan Reynolds Phone: 206 510 0621

Chemical Hazards: Fuels ☒ Lubricants ☐ Solvents ☐ Adhesives ☐ Other ☐ _____
MSDS Available in: Field Office ☐ Truck ☐ Main Office ☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☒ Slip/Trip/Falls ☒ Excavation/Trenching ☐
Noise ☐ Demolition ☐ Weather ☐ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Other PPE _____

Safety Issues / Topics: PPE ☒ Site/Traffic Control ☒ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☐ _____
_____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
BAKER TANKS	PUMP WATER	
	SUPPORT ICE	CLEAN AN ICE OFF
		TANKS

ATTENDEES

	Printed Name	Company/Agency	Signature
	Trent Tesner	Wyser	
	Spencer Wyatt		
3	DAVID SANSBURY		
4	Chuck Barker		
5	Robert Reynolds		
6			
7			
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy | **Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394 | **Date**: 11/19/14

1801 N. Northlake Way Seattle 98103 | Type Work: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.

Communication Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

Hospital: **UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320**

Emergency Notification - Supervisor_____ Phone:_____

☐ ☐ Solvents☐ Adhesives☐ Other ☐ _____

MSDS Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐

Noise ☐ Weather ☐ Other☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection

_____

Safety Issues / Training: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐

Tools ☐ Chemicals ☐ Hot Work ☐ Housekeeping ☐ _____

_____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
SOD		Safe Lifting

ATTENDEES

	Printed Name	Company/Agency	Signature
	Spencer White		
	Ignacio Quiroz		Ignacio Quiroz
3	Alejandra Quiroz Jr.		
4	Pablo A. Quiroz	WYSER	
5	Robert Reynolds	Wyser	
6	Trent Jesmer	Wyser	
7			
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/20/14
Location: Gas Works Park 1[illegible] N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐_____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

Printed Name	Company/Agency	Signature
Robert Reynolds		
Spencer White		
Libby Dykes		
Isaac Vasquez	Wyser	
Alejandro Quiroz Jr.		
Pablo A. Quiroz		
Ignacio Quiroz		Ignacio Quiroz
Inducted By:		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date**: 11/20/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer Wynite		
2	Chuck Hyatt		
3	Kent Reynolds		
4	Pablo M. Quiroz	WYSER	
5	Trent Jessen	Wyser	
6	DAVID STAHLBERG		
7	MANUEL N. PEREZ	WYSER	
8	Ignacio Quiroz		
Conducted By:	Alejandro Quiroz Jr		Ignacio Quiroz

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/24/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
	SPEEDING INC CARS	GO SLOW
	TRUCKS WATCH OUT	
	WORKERS AND EDGES OF	
	ASPHALT.	
	SLIPS TRIPS AND FALL	
	MUD AND WATER.	
	WALKING THROUGHT MUD	

ATTENDEES

	Printed Name	Company/Agency	Signature
1	DAVID STRASBURG		
2	Spencer White		
3	Chris Wright		
4	Ignacio Quiroz		Ignacio Quiroz
5	Foster Reynolds		
6	Isaac Jasmon	Wyser	
	Colby Dyson	Wyser	
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/25/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
WAter line Robert Reynolds	Trench Box	Shoring Rob Reynolds

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Ignacio Quiroz		Ignacio Quiroz
3	Robert Reynolds		
4	Colby Dykes		
5	Pablo M. Quiroz	WYSER	
6	Alejandro Perez Jr		
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/26/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor _____ Phone: _____

Chemical Hazards: Fuels ☐ Lubricants ☐ Solvents ☐ Adhesives ☐ Other ☐ _____
MSDSs Available in Field Office ☐ Truck ☐ Main Office ☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☐ Slip/Trip/Falls ☐ Excavation/Trenching ☐
Noise ☐ Demolition ☐ Weather ☐ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☐
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
Water Line	CAVein	Shoring

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Chuck Ankeny		
3	Ignacio Quiroz		Ignacio Quiroz
4	Jeff Clemmer	Wyser	
5	Robert Reynolds	Wyser	
6	Colby Dykes		
8	Alejandro Quiroz Jr		
Conducted By:	Pablo Quiroz	Wyser	

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12/1/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor _____ Phone: _____

Chemical Hazards: Fuels ☐ Lubricants ☐ Solvents ☐ Adhesives ☐ Other ☐ _____
MSDSs Available in Field Office ☐ Truck ☐ Main Office ☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☐ Slip/Trip/Falls ☐ Excavation/Trenching ☐
Noise ☐ Demolition ☐ Weather ☐ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☐
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Chuck Arella		
2	[illegible]		[illegible]
3	Ignacio Quiroz		Ignacio Quiroz
4	Pablo H. Quiroz	WYSER	
5	Alejandro Ramos		
6	Robert Reynolds		
7	Jack Jesner	WYSER	
8	[illegible]		
Conducted By:	[illegible]	WYSER	

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12-02-14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐_____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
	Ice	

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Chad Wells		
2	Ignacio Quiroz		Ignacio Quiroz
3	Spencer White		
4	Pablo M. Mejia		
5	Alejandro Quiroz Jr		
6	Trent Tegner		
7	Robert Reynolds	Wyser	
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date**: 12/3/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Ignacio Quiroz		Ignacio Quiroz
3	Pablo A. Quiroz		
4	Trait Taner	Wyser	
5	Alejandro Quiroz Jr		
6	Edwin Ayala		
7	Robert Reynolds	Wyser	
8			
	Conducted By:		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12/4/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Chuck Bruton		
3	Ignacio Quiroz		Ignacio Quiroz
4	Robert Reynolds		
5	Trent Wisner	Wyser	
6	Alejandro Quiroz Jr		
		Wyser	
8	Pablo A Quiroz		
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12/5/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor__________ Phone:__________

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ __________
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐ __________

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE__________

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ __________
Other __________

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Chuck Azcelitz		
2	Manuel A. Ybarra	Wyser	[signature]
3	Robert Reynolds	Wyser	
4			
5			
6			
7			
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date**: 12/8/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Ignacio Quiroz		Ignacio Quiroz
3	Pablo A. Quiroz	WYSER	
4	Chuck Arndt		
5	Alejandro Quiroz Jr		
6	Trent Tesner	Wyser	
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12/9/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
	MVD	

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Ignacio Quiroz		Ignacio Quiroz
3	Pablo M. Quiroz	WYSER	
4	Alejandro Quiroz Jr		
5	TRENT JESMER	WYSER	
6			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 11/25/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
WAter line Robert Reynolds	Trench Box	Shoring Rob Reynolds

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer White		
2	Ignacio Quiroz		Ignacio Quiroz
3	Robert Reynolds		
4	Colby Dykes		
5	Pablo H. Quiroz	WYSER	
6	Alejandro Quiroz Jr		
7	Trent Tasker	Lunar	
8			
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12-16-14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
Confined Space		

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Seeker White		
2	Pablo M. Quiroz	WYSER	
3	Ignacio Quiroz		Ignacio Quiroz
4	Alejandro Quiroz J		
5			
6			
	Conducted By:		

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12/11/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor MANUEL Phone: 206 510 1031

Chemical Hazards: Fuels ☐ Lubricants ☐ Solvents ☐ Adhesives ☑ Other ☐ _____
MSDSs Available in Field Office ☐ Truck ☐ Main Office ☑

Biological Hazards: Sewage ☑ Bloodborne Pathogens ☑ Syringes ☑ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☑ Slip/Trip/Falls ☑ Excavation/Trenching ☑
Noise ☐ Demolition ☐ Weather ☑ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☑ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
WEATHER SYSTEM COMING IN - HIGH	WINDS	SAFETY @ HOME TOO. PREPARE FOR POSSIBILITY OF LOSS OF POWER.
TEST IRRIGATION	MAINLINE PRESSURE	BACKFILL UNTIL LINE ENOUGH TO ANCHOR / STAKE 90° AS NEEDED BLOCK / PLUGGED AIR FLOW LENGTH

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 2/11/14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor MANUEL Phone: 206 510 1031

Chemical Hazards: Fuels ☐ Lubricants ☐ Solvents ☐ Adhesives ☑ Other ☐ _____
MSDSs Available in Field Office ☐ Truck ☐ Main Office ☑

Biological Hazards: Sewage ☑ Bloodborne Pathogens ☑ Syringes ☑ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☑ Slip/Trip/Falls ☑ Excavation/Trenching ☑
Noise ☐ Demolition ☐ Weather ☑ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☑ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
WEATHER SYSTEM COMING IN - HIGH	WINDS	SAFETY @ HOME TOO. PREPARE FOR POSSIBILITY OF LOSS OF POWER.
TEST INSTALLATION	MONITOR PRESSURE.	BACKFILL UNDERLINE ENOUGH TO ANCHOR / STAKE 90° AS NEEDED BLOCK / PLUGGED AIR FLOW SENSOR.

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Spencer Winter		
2	Pablo A. Quiroz	WYSER	
3	Ignacio Quiroz		Ignacio Quiroz
4	Alejandro Quiroz Jr		
5	Antonio Arbizu	WYSER	2/11/14
6	Trent Tonn	WYSER	
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project**: Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date**: 7.12.14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work**: Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action

ATTENDEES

	Printed Name	Company/Agency	Signature
1	MANUEL RIVERA	WYSER	
2	Javier Tejeda	Wyser	
3	Spencer White		
4	Pablo M. Cruz	Wyser	
5	Tyrone Chavez		Tyrone Chavez
6	Alejandro Ramirez		
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12.15.14
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor _____ Phone: _____

Chemical Hazards: Fuels ☐ Lubricants ☐ Solvents ☐ Adhesives ☑ Other ☐ _____
MSDSs Available in Field Office ☐ Truck ☐ Main Office ☑

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☑ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation ☑ Slip/Trip/Falls ☑ Excavation/Trenching ☑
Noise ☐ Demolition ☐ Weather ☐ Other ☐ _____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE _____

Safety Issues / Topics: PPE ☑ Site/Traffic Control ☑ Equipment Operation ☑ Excavation/Trenching ☑
Tools ☐ Electrical ☐ Hot Work ☐ Housekeeping ☑ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
Trench in Roadway.	Pressure, Bevels & Barricading the Public	

ATTENDEES

	Printed Name	Company/Agency	Signature
1	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]
4	[illegible]	Wyser	[illegible]
5	[illegible]		[illegible]
Conducted By:			

WYSER - DAILY SAFETY MEETING – PLAN OF ACTION

Client: Puget Sound Energy	**Project:** Gas Works Park / Kite Hill Project P.O. #PSE-14-1394	**Date:** 12-16-2014
Location: Gas Works Park 1801 N. Northlake Way Seattle 98103	**Type Work:** Removal of Sod and Topsoil from approximately 3 – 18 inches, backfill, compact with structural fill & topsoil to match existing grade. Install irrigation system, and hydroseed area.	

Emergency Procedures: For Fire, Police or Medical Emergency **CALL 911** - Notify Supervisor and Safety Officer immediately and proceed as directed. **Safety Director – Dan Reynolds 206-510-0672**

HOSPITAL: UW Medical Center ER 1959 NE Pacific ST. Seattle 98195 ER (206) 543-3320

Emergency Notification - Supervisor_____ Phone:_____

Chemical Hazards: Fuels☐ Lubricants☐ Solvents☐ Adhesives☐ Other ☐ _____
MSDSs Available in Field Office☐ Truck ☐ Main Office☐

Biological Hazards: Sewage ☐ Bloodborne Pathogens ☐ Syringes ☐ Wildlife ☐

Physical Hazards: Vehicle/Heavy Equipment Operation☐ Slip/Trip/Falls☐ Excavation/Trenching☐
Noise☐ Demolition ☐ Weather ☐ Other☐_____

Personal Protective Equipment: Hard Hat; Safety Toed Boots; High Visibility Vests; Gloves, Eye & Hearing Protection
☐ Special PPE_____

Safety Issues / Topics: PPE ☐ Site/Traffic Control ☐ Equipment Operation ☐ Excavation/Trenching ☐
Tools ☐ Electrical ☐ Hot Work☐ Housekeeping ☐ _____
Other _____

Daily Activity Hazard Analysis - Safe Plan of Action

Task / Operation	Potential Hazards	Safe Plan of Action
Trench Backfill & Curb Parkway	Utility Crossings.	

ATTENDEES

	Printed Name	Company/Agency	Signature
1	Manuel N Bruna		
2	Ivan Jaimes	Wyser	
3	Ignacio Quiroz		Ignacio Quiroz
4	Pablo A. Quiroz	Wyser	
5	Alejandro Quiroz J		
6			
Conducted By:			

APPENDIX O
Air Monitoring Report

EHS–International, Inc.

13228 NE 20th Street, Suite 100
Bellevue, Washington 989005-2049
Phone 425-455-2959
Toll Free 800-666-2959
Fax 425-646-7247

May 5th, 2015

Ms. Zanna Satterwhitte
GeoEngineers, Inc.
8410 - 154th Ave NE
Redmond, WA 98052

Subject: **Kite Hill Cover Project, Gas Works Park, Seattle, WA**
GeoEngineers Perimeter Fence Line and Worker Exposure
Air Sampling Closeout Report
EHSI Project 10663-02

Dear Zanna:

On September 5th, 2014, at your request, EHS-International, Inc. (EHSI), an environmental health and safety firm, conducted perimeter fence line and worker exposure air sampling at Gas Works Park, located at 2101 North Northlake Way, Seattle, WA. On September 12th and 17th, 2014, EHSI returned and accomplished additional fence line air sampling per your request. The attached report provides a summary and the lab results for those air sampling events.

EHSI is pleased to provide our professional industrial hygiene services. If you have any questions concerning this report or if EHSI can provide further services to you, please call me at (425) 455-2959.

Sincerely,
EHS-International, Inc.

Herb Brod, CIH
Technical Director
425-455-2959

Attachments: Summary Report of Air Sampling September 5th, 12th, and 17th, 2014 at Gas Works Park

EHS–International, Inc.

.

PERIMETER FENCE LINE AND WORKER EXPOSURE AIR SAMPLING REPORT FOR GEOENGINEERS, Inc. September 5th, 12th, & 17th, 2014

Kite Hill Soil Cover Project, Gas Works Park Seattle, Washington

EXECUTIVE SUMMARY

Puget Sound Energy (PSE) contracted GeoEngineers, Inc. (GeoEngineers) to provide construction administration and environmental support for the soil cover maintenance work at the Kite Hill portion of Gas Works Park (project area), located at 2101 North Northlake Way in Seattle, Washington. In conjunction with that project, GeoEngineers contracted EHS-International, Inc. (EHSI), an environmental health and safety consulting firm, to conduct representative perimeter fence line ambient air sampling and personal exposure air sampling, and review the analytical results. On September 5th, 12th & 17th, 2014, EHSI conducted ambient air sampling at the downwind fence line perimeter of the project area for GeoEngineers. In addition, on September 5th, EHSI collected worker exposure air monitoring samples. The individual to be monitored for worker exposure monitoring, as well as perimeter sample locations, were chosen by GeoEngineers. The majority of earthwork activities (excavation and tilling) was conducted between August and October 2014. Air sampling was conducted on select days representative of substantial earthwork activities completed in the project area. Air samples were collected and analyzed for arsenic, benzene, and polycyclic aromatic hydrocarbons (PAHs).

On September 5th, 2014, worker exposure monitoring was conducted on Michael Gray, who was responsible for observing excavation and tilling work. Mr. Gray was noted to be in close proximity to this work throughout the sampling period. On September 5th, a perimeter ambient air sample was also collected on the east perimeter fence line (downwind) of the construction work zone.

On September 12th & 17th, 2014, perimeter air monitoring was conducted along the north perimeter fence line (downwind) of the construction work zone. Sample location maps for each day are included in the attachments section of this report.

Results from the worker exposure and perimeter fence line air sampling indicate that excavation, stockpiling and off-loading of soils during the Kite Hill Soil Cover Project did not create exposures to arsenic, benzene, or PAHs at or above the analytical method detection limits or approaching the Washington State Department of Labor and Industries (L&I) Division of Occupational Safety and Health (DOSH) permissible exposure limits (PELs) within the work zone or at the perimeter fence line. These thresholds were developed for worker exposure scenarios and cannot be directly applied to public bystanders, but are included for comparison purposes.

BACKGROUND

Gas Works Park is comprised of three parcels totaling approximately 20 acres between North Northlake Way and Lake Union in Seattle. The project area includes approximately 4 acres and is located in the southwest quadrant of the park. The project area is surrounded by a pedestrian walkway to the north, the existing cracking towers to the east, Lake Union to the south and the Seattle Harbor Patrol to the west. The project area generally slopes away from a central high point on top of a large manmade hill known as Kite Hill; however, there are local variances associated with the storm water collection system. This central hill and immediately surrounding area is referred to, collectively, as the project area.

From 1907 to 1956 the Seattle Gas Light Company (predecessor to Puget Sound Energy) owned and operated a manufactured gas plant at what is currently known as Gas Works Park. Gas manufacturing, tar refining, landfilling, chemical manufacturing, and fuel storage occurred at the park. From 1962 to 1970, the City used the Kite Hill area to stockpile material generated from off-site construction projects. The stockpile became known as the “Great Mound” and was re-graded to form the current Kite Hill using soil stockpiled on Site from 1970 to 1976. Known chemicals of concern that were potentially anticipated to be impacted by the current project include: inorganic Arsenic; Benzene; and polycyclic aromatic hydrocarbons (PAHs), including, but not limited to: Benzo (a) anthracene, Benzo (b) fluoranthene, Benzo (k) fluoranthene, Benzo (a) pyrene, Chrysene, Dibenz (a, h) anthracene, Indeno (1,2,3-cd) pyrene, Fluoranthene, Fluorene, Naphthalene and Pyrene.

The site chemicals of concern had been previously characterized by GeoEngineers and others.

EHSI provided chemical-specific perimeter fence line and worker exposure air sampling to provide information regarding the potential levels of airborne contaminants within and at the perimeter of the project area during earthwork operations.

APPROACH

When collecting the ambient air data, EHSI used a 3M 3520 Organic Vapor Monitoring (OVM) badge for benzene, glass fiber filter cassette for PAH’s and 37 mixed cellulose ester (MCE) 0.8µm filter media for arsenic. For worker exposure sampling, the OVM, glass fiber filter cassette and 37 MCE 0.8µm filter media were placed in the breathing zone of a GeoEngineers worker who wore them for a 6 hour shift. For perimeter air samples, the OVM, glass fiber filter cassette and 37 MCE 0.8µm filter media were placed approximately three feet above ground level along the "downwind" perimeter chain link fence line and allowed to collect air for a 6 hour work shift. At the conclusion of each 6 hour shift the sampling media were collected, processed and sent to Galson Laboratories (Galson) in East Syracuse, New York, under chain-of-custody control. Galson is accredited by the AIHA under the Industrial Hygiene Laboratory Accreditation Program, LLC (Laboratory ID 100324). A copy of Galson’s accreditation is available upon request. Wind direction, temperature and relative humidity measurements were determined by periodic checks with a hand held Extech Instruments model 45160 - 3 in 1 hygrometer, thermometer and anemometer and visual observation of the project area.

Air sampling was conducted on September 5th, 12th and 17th by Ms. Lisa Kollasch, EHSI Industrial Hygienist.

DESCRIPTION OF WORK ACTIVITIES

Work activities on September 5th consisted of tilling the top soil of the eastern portion of the project area and stripping the topsoil on Kite Hill and the southeast portion of the project area along Lake Union. Work was conducted in the southeast area from 7:30am until about 10am, in the eastern area from 7:30am until about 11am and on Kite Hill from 7:30am until past the sampling end time around 2pm.

Work activities on September 12th and 17th consisted of excavating, stockpiling and off-loading the top soil on Kite Hill. Work on Kite Hill started at 7:30am and continued past the sampling end time around 2pm.

Daily periodic weather and wind checks indicated that on September 5th the wind was predominantly from the west with gusts up to almost 470 feet per minute (fpm). The day was windy with most wind speeds measuring at about 250 fpm. On September 12th the wind was predominantly from the south with gusts up to almost 381 fpm. The weather was breezy with most wind speeds measuring around 200 fpm. On September 17th the wind was predominantly from the southwest with gusts up to almost 500 fpm. The weather was cloudy and breezy with periods of light rain and most wind speeds measuring about 300 fpm.

ANALYTICAL RESULTS

Table 1 provides a summary of the analytical results for the worker exposure air samples collected on September 5th, 2014. Table 2 provides a summary of the analytical results for the perimeter air monitoring collected on September 5th, 12th & 17th, 2014. Analytical reports, Chain-of-Custody forms and EHSI data sheets are provided as attachments to this report.

Table 1
Worker Exposure Monitoring Results
September 5, 2014
Reported at milligrams per cubic meter of air (mg/m^3)

Analyte	10663-Benzene-2014-09-05-02	10663-As-2014-09-05-02	10663-PAH-2014-09-05-02	WA State PELs
Arsenic	--	<0.00041	--	0.01
Benzene	<0.2	--	--	3.195
Polycyclic Aromatic Hydrocarbons	--	--	<0.081	0.2

--- = Sample not analyzed for noted analyte.

Table 2
Perimeter Ambient Air Monitoring Results
September 5, 12 & 17, 2014
Reported at milligrams per cubic meter of air (mg/m^3)

Analyte	10663-Benzene-2014-09-17	10663-As-2014-09-17	10663-PAH-2014-09-17	WA State PELs
September 5, 2014				
Arsenic	--	<0.00041	--	0.01
Benzene	<0.2	--	--	3.195
Polycyclic Aromatic Hydrocarbons	--	--	<0.083	0.2
September 12, 2014				
Arsenic	--	<0.00042	--	0.01
Benzene	<0.2	--	--	3.195
Polycyclic Aromatic Hydrocarbons	--	--	<0.082	0.2
September 17, 2014				
Arsenic	--	<0.00042	--	0.01
Benzene	<0.2	--	--	3.195
Polycyclic Aromatic Hydrocarbons	--	--	<0.083	0.2

--- = Sample not analyzed for noted analyte.

DISCUSSION OF ANALYTICAL RESULTS

The laboratory analytical reports are included as an attachment to this report.

Analytical results indicate that at each time of monitoring the air samples were found to contain none of the chemicals of interest at concentrations above the analytical laboratory's detection limits (DLs).

In addition, the DLs are all less than the PEL levels established by DOSH.

LIMITATIONS AND STANDARD OF CARE

This perimeter and worker exposure air monitoring was conducted by EHSI in accordance with the Scope of Work defined by EHSI proposal 14-158. The assessment contained in this report is in accordance with currently accepted industrial hygiene practices. Other than this no warranty is implied or intended.

Samples were collected and the report prepared by Ms. Lisa Kollasch, Industrial Hygienist.

Lisa Kollasch, Industrial Hygienist — May 5, 2015 (Date)

Report reviewed by Herbert Brod, Certified Industrial Hygienist.

Herbert Brod, Certified Industrial Hygienist — May 5, 2015 (Date)
Cert No. 8563 CP, Cert Exp. Date 12/01/18

Attachments:

- Daily Logs
- Galson Laboratory Analytical Reports
- EHSI Air Monitoring Sampling Sheets
- Perimeter Air Sampling Location(s)

EHS–International, Inc.
13228 NE 20th Street, Suite 100
Bellevue, WA 98005
Phone: (425) 455-2959 . (800) 666-2959. Fax: (425) 646-7247

DAILY LOG

Date: 9-5-14 Project #: 10663 Project: Gasworks
Time: 7:30 Weather: Sunny Gen. Con. Wyser Construction
Shift: Day Temp: 80° Abate Con. GeoEngineers

Site Conditions:
Work in Progress: Excavation and filling of contaminated soil
Environmental Controls: Perimeter barriers, water
Materials Disposed: N/A

Personnel:
Contractor Manpower 1+4 Site Superintendent Theo Leonard
Visitors ACF West

Observations: (Time, events, discussions, corrective actions, progress, names, contact #'s, locations, etc.)

7:00 Leave for site
7:30 On site. Meet Theo Leonard of Geo Engineers, site supervisor and am given site safety training and orientation. Theo tells me the wind has been blowing towards the East and asks me to collect my samples there. Theo also requested that personal air sampling be done today.
8:00 Area air samples for benzene, PAH and arsenic are set up along the east perimeter fence. Filling of topsoil is taking place on the East portion of the site. Excavations are being done at the south end of the site near Lake Union and on site hill.
Personal samples for benzene, PAH and arsenic are also set up in the breathing zone of Mark Gray. He is doing observations of all excavation and filling activities today.
The wind is blowing from the NW at 19.8 RPM (revolutions

Signature: [signature]
Print Name: LISA KOLLASCH

EHS-International, Inc.
13228 NE 20th Street, Suite 100
Bellevue, WA 98005
Phone: (425) 455-2959 . (800) 666-2959. Fax: (425) 646-7247

DAILY LOG

Observations Continued:

per minute), relative humidity is 68.7% and Temperature is 66.7°F. (Measurement obtained using a 3 in 1 Thermo, Hydro and anemometer by Extech instruments, Model # 45160.

10:00 Wind reading 232 RPM from the west. Temperature is 72.2°F and relative humidity is 59.0%. Excavation has ceased at the south end of the park. Both excavators are now working on site hill.

11:00 Wind at 322 RPM from the North. Temperature is 75.9°F and relative humidity is 50.1%.

12-12:30 Site Engineers takes lunch. Mark Gray continues wearing the air sampling equipment during his lunch break.

1:00 Wind at 466 RPM from the west. Temperature at 91.9°F, relative humidity at 37.1%.

Filling work at the east end of the site has ceased. One worker drives a water tank to the filled field and manually hoses it down with water.

The top ~1/3 of site hill has had the top soil stripped by excavators. Soil is being stockpiled in the NW section of the site near piles of previously removed vegetation and asphalt.

1:20 ACF West arrives with one truckload of TRIAX 130 (weed and turf stabilizer). It is unloaded and staged in the NE area of the site.

2:00 Pull air samples and prepare for shipment to Nelson Labs.

2:30 Leave site.

3:30 Drop off samples at Fed Ex.

Signature: _____

Print Name: LISA KOLLASCH

GALSON LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 09, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L327603

Dear Mr. Brod:

Enclosed are the revised analytical results for the samples received by our laboratory on September 08, 2014. The Project # and sample IDs have been updated. The data are not affected. This version of the report replaces any previously issued versions. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : Gasworks
Project No. : 10663

Date Sampled : 05-SEP-14
Date Received : 08-SEP-14
Date Analyzed : 08-SEP-14
Report ID : 848626

Account No.: 13697
Login No. : L327603

Arsenic

Sample ID	Lab ID	Air Vol liter	Total ug	Conc mg/m3
10663-AS-14-09-05-01	L327603-1	730	<0.30	<0.00041
10663-AS-14-09-05-02	L327603-2	734	<0.30	<0.00041

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.30 ug
Analytical Method : mod. NIOSH 7300/mod. OSHA ID-125G; ICP
OSHA PEL : 0.01 mg/m3 (TWA)
Collection Media : Filter

Submitted by: crd/gjm
Approved by : keg
Date : 09-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : Gasworks
Project No. : 10663

Date Sampled : 05-SEP-14
Date Received: 08-SEP-14
Date Analyzed: 08-SEP-14

Account No.: 13697
Login No. : L327603

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L327603 (Report ID: 848626):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(26), im-filter(19)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Arsenic	+/-9.6%	105%

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES

6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

315527

☐ New Client?

Client Account No.*: 13697

Report To*: Heb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005

Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: hebbe ehsintl.com
Email address: Heb Brod

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005

Phone No.: (425) 455-2959
Email: Shelbyn@ehsintl.com
P.O. No.: ~~10668~~-01 10663
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☒ Samples submitted using the FreePumpLoan™ Program
☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☒ Next Day by Noon	150%
☐ Same Day	200%

Site Name: Gasworks
Project: ~~10668~~ 10663
Sampled by: Lisa Kollasch
Comments:

R5

List description of industry or Process/Interferences present in sampling area: Excavation of contaminated soil

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☒ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters) 10663	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
~~10668~~-As-2014-09-05-01	9-5-14	37mm 0.8um	~~365~~	730L	Arsenic	Mod. NIOSH 7300	, Area
~~10668~~-As-2014-09-05-02	9-5-14	37mm 0.8um	~~367~~	734L	Arsenic	Mod. NIOSH 7300	Personal

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch / LK	9-5-14	3:00pm	Received by:			
Relinquished by:				Received by:	M. Kraus / M. Kraus	9/8/14	0919

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 1

Page 5 of 5 Report Reference:2 Generated:08

ehsi

EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-5-14
EHSI Project No. 10668
Project Name Gasworks
Technician Lisa Kollasch
Analyte Arsenic

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663 ~~10668~~ AS-2014-09-05-01	East Perimeter	Pb35	2.0	2.0	2.0		7:46 / 1:51	365	730	37mm 0.8µm	Contaminated soil excavation
10663 ~~10668~~ AS-2014-09-05-02 (P)	Personal on	P1207	2.0	2.0	2.0		8:06 / 2:13	367	734	"	observation of cont. soil excavations.

Rotameter R763

Rotameter Correction Factor Y = 1.108 X + -0.084

Technician Certification

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature]

Date: 9-5-14 Page 1 of 1

GALSON
LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 09, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L327601

Dear Mr. Brod:

Enclosed are the revised analytical results for the samples received by our laboratory on September 08, 2014. The Project # and Sample IDs have been updated. The results are not affected. This version of the report replaces any previously issued versions. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : Gasworks
Project No. : 10663-01

Date Sampled : 05-SEP-14
Date Received : 08-SEP-14
Date Analyzed : 08-SEP-14
Report ID : 848596

Account No.: 13697
Login No. : L327601

Benzene

Sample ID	Lab ID	Time minutes	Front ug	Back ug	Total ug	Conc mg/m3	ppm
10663-2014-09-05-01	L327601-1	360	<2	<2	<2	<0.2	<0.05
10663-2014-09-05-02	L327601-2	360	<2	<2	<2	<0.2	<0.05

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 2 ug
Analytical Method : mod. NIOSH 1501; GC/FID BADGE
OSHA PEL : 1 ppm (TWA)
Collection Media : M3M-3520

Submitted by: mln
Approved by : dnf
Date : 09-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : Gasworks
Project No. : 10663-01

Date Sampled : 05-SEP-14
Date Received: 08-SEP-14
Date Analyzed: 08-SEP-14

Account No.: 13697
Login No. : L327601

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L327601 (Report ID: 848596):
Total ug corrected for a desorption efficiency of 100%.
Please note that back media results above the LOQ have been multiplied by a factor of 2.2 in all "total ug" calculations (as specified in the 3M method).
SOPs: GC-SOP-12(8), GC-SOP-16(13), GC-SOP-9(11)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Benzene	+/-6.4%	94.1%

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client? Report To*: Herb Brod
EHSI
13228 NE 20th St #100
Bellevue, WA 98005
Client Account No.*: 13697
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: herbb@ehsint1.com
Email address: Herb Brod

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005
Phone No.: (425) 455-2959
Email: herbb@ehsinth.com
P.O. No.: ~~10668~~-01
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.
10663 @

☐ Samples submitted using the FreePumpLoan™ Program
☒ Samples submitted using the FreeSamplingBadges™ Program

315527

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☒ Next Day by Noon	150%
☐ Same Day	200%

Site Name: Gasworks
Project: 10668-01 10663@ (SK)
Sampled by: Lisa Kollasch
Comments: ~~Dosimeter ID is 1105 02, Badge ID is 1105 01~~ OK @ (R4)
List description of industry or Process/interferences present in sampling area: Excavation of contaminated soil
State samples were collected in (e.g., NY): WA
Please indicate which OEL this data will be used for: ☒ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume / Sample Time / Sample Area*	Sample Units*: L,ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
~~EXAMPLE~~	~~04/24/13~~	~~2pc UW PVC~~	~~960~~	~~min~~	~~Hexavalent Chromium (Cr6)~~	~~Mod OSHA ID-215~~	~~Welding~~
10668-Benzene-2014-09-05-01	9-5-14	3m 3520		min.	Benzene	NIOSH 1501	excavation
10668-Benzene-2014-09-05-02	9-5-14	3m 3520		min	Benzene	NIOSH 1501	excavation

10668 @ (SK) Generated 09-05-14
10663 @

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC
For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):
For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch	9-5-14	3:00pm	Received by:			
Relinquished by:				Received by:	M. Krause / M. Krause	9/8/14	0919

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-5-14
EHSI Project No. 10668
Project Name Microsoft
Technician Lisa Follas
Analyte Benzene

Benzene **AIR MONITORING SAMPLING SHEET**

Sample #	Location	Badge Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663 ~~10668~~ PAH 2014-09-05-01	Perimeter, East on Fence	WL0967	NA	NIA	NIA	NIA	7:53 / 1:58	360	NIA	3M 3520 badge	Contaminated soil excavation on Kite Hill and along Lake Union
10663 ~~10668~~ Benzene - 2014-09-05-02	Personal Mark Gray	WL7636	NA	NIA	NA	NIA	8:06 / 2:06	360	NIA	3M 3520 badge	observing excavation s

Rotameter R763 Rotameter Correction Factor Y= 1.108 X+ -0.084

Technician Certification

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date 9/5/14 Page 1 of 1

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 09, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L327599

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 08, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : Gasworks Park
Project No. : 10663-01

Date Sampled : 05-SEP-14
Date Received : 08-SEP-14
Date Analyzed : 09-SEP-14
Report ID : 848663

Account No.: 13697
Login No. : L327599

Benzene Soluble Particulate

Sample ID	Lab ID	Air Vol liter	Total mg	Conc mg/m3
10663-2014-09-05-01	L327599-1	722	<0.060	<0.083
10663-2014-09-05-02	L327599-2	738	<0.060	<0.081

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.060 mg
Analytical Method : mod. OSHA 58; Gravimetric
OSHA PEL : 0.2 mg/m3 (TWA)
Collection Media : 225-7 GFF

Submitted by: PJD
Approved by : JGC
Date : 09-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : Gasworks Park
Project No. : 10663-01

Date Sampled : 05-SEP-14
Date Received: 08-SEP-14
Date Analyzed: 09-SEP-14

Account No.: 13697
Login No. : L327599

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L327599 (Report ID: 848663):
SOPs: ic-ctpv(16)
The Benzene Soluble Particulate results are considered accurate to within +/- 20.5% based on a 95% confidence interval (k=2). This method has an average recovery of 98.5%. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EMSI
13228 NE 20th St. # 100
Bellevue, WA 98005
Phone No.*: (425) 455-2959
Cell No.: (360) 471-2092
Email Results to: Herb Brod
Email address: herbb@emsintl.com

Invoice To*: Admin
EMSI
13228 NE 20th St. # 100
Bellevue, WA 98005
Phone No.: (425) 455-2959
Email: Shelbyn@emsintl.com
P.O. No.: ~~10663-01~~ 10663-01
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☐ Next Day by Noon	150%
☐ Same Day	200%

Site Name: Gasworks Park Project: ~~10668-01~~ 10663-01 Sampled by: Lisa Kollasch

Comments:
~~* ID is "10668 2014-09-05-02"~~ SK OK @

R3

List description of industry or Process/interferences present in sampling area: excavation of contaminated soil

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☒ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
~~EXAMPLE~~	~~04/24/13~~	~~2pc UW PVC~~	~~960~~	L	~~Hexavalent Chromium (Cr6)~~	~~Mod OSHA ID-215~~	~~Welding~~
10663-PAH-2014-09-05-01	9-5-14	37mm GFF	722	L	Coal Tar Pitch Volatiles	OSHA 58	Area
10668-PAH-2014-09-05-02 *	9-5-14	37mm GFF	738	L	Coal Tar Pitch Volatiles	OSHA 58	Personal

Samples Received in Light Sensitive Material: (Yes) or No

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: If requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	LISA KOLLASCH	9-5-14	3pm	Received by:			
Relinquished by:				Received by:	M. Krause / M. Krause	9/8/14	0916

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-5-14
EHSI Project No. 10668
Project Name - Gasworks
Technician Lisa Kollasch
Analyte PAH

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10668-PAH-2014-09-05-01	Perimeter, East	P1325	2.0	2.0	2.0		8:01 / 2:00	361	722	37 mm GFF 2 pc.	
10668-PAH-2014-09-05-02	Personal Mark Gray	P143	2.0	2.0	2.0		8:06 / 2:15	369	738	"	observing excavations

Rotameter R763 Rotameter Correction Factor Y = 1.08 X + -0.084

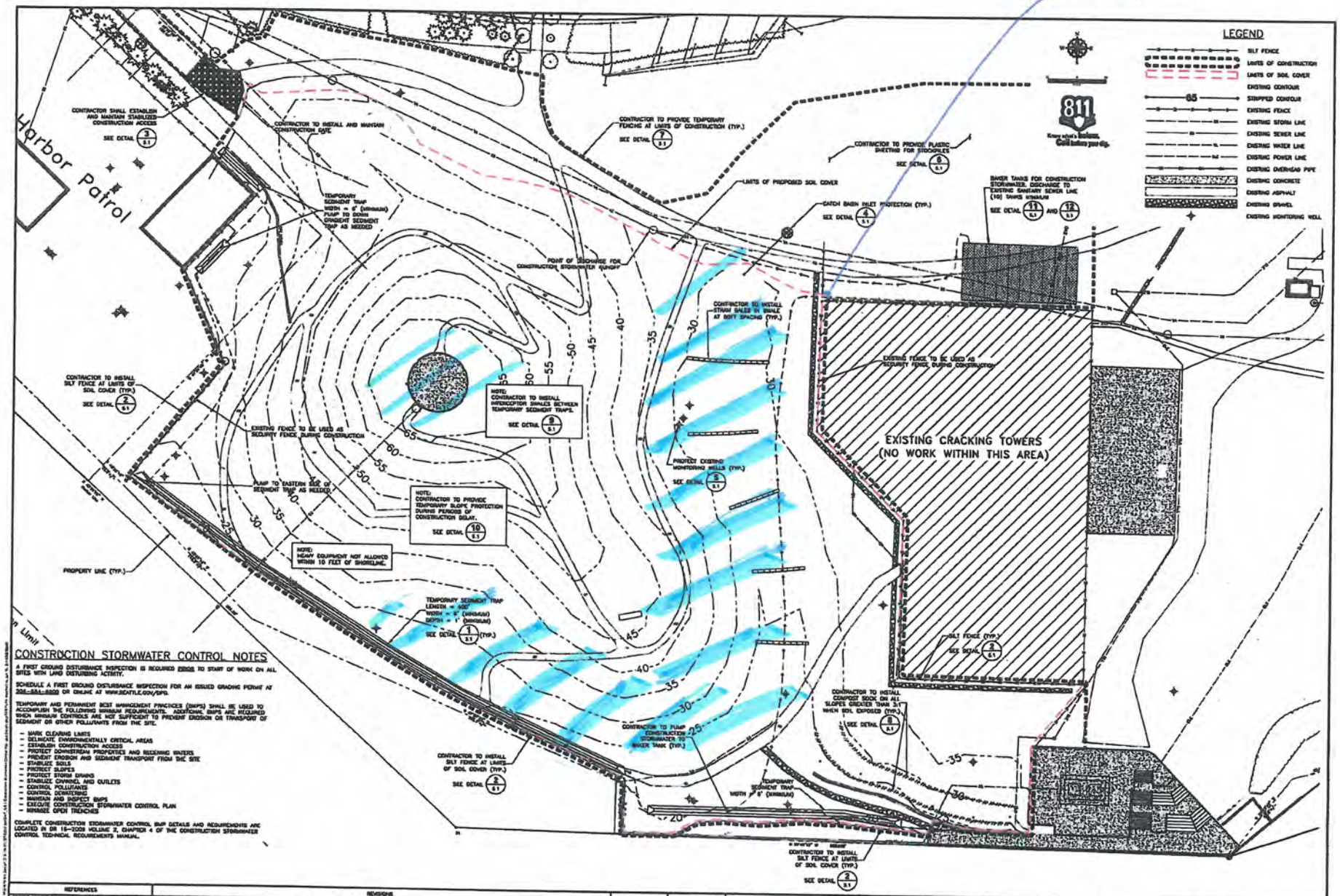
Technician Certification:

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date 9-5-14 Page 1 of 1

Page 5 of 5 Report Reference: Generated: 09-SEP-14 14:53

9-5-14



Approximate work area locations.

EHS–International, Inc.
13228 NE 20th Street, Suite 100
Bellevue, WA 98005
Phone: (425) 455-2959 . (800) 666-2959. Fax: (425) 646-7247

DAILY LOG

Date: 9-12-14 Project #: 10663-02 Project: Grasworks

Time: 7:30 Weather: Sunny Gen. Con. Wyser

Shift: Day Temp: 70° Abate Con. Geo Engineers

Site Conditions:

Work in Progress: Excavation of contaminated topsoil on Kirk Hill

Environmental Controls: water, berms

Materials Disposed:

Personnel:

Contractor Manpower 1 + 4 Site Superintendent Theo Leonard

Visitors True North Land Survey, Inc

Observations: (Time, events, discussions, corrective actions, progress, names, contact #'s, locations, etc.)

6:45 Leave for site

7:15 On site. Trucks are leaving site with loads of contaminated soil, as I park off site.

7:45 Speak with Theo about wind directions this week, ongoing site work and where he'd like samples. Todays work on contaminated soil removal and stockpiling will be focused on the NW side of the hill Breezes have been periodically from the South and Theo asked for the fence line samples to be set up to the north. Samples are set up

9:30 Bursts of wind noted from the SW up to 62 fpm. Relative humidity is 41.0%, Temperature is 60.9°F Two excavators running on site hill with one worker hosing down soil.

11:30 Wind from the SE at 240 fpm. Temp = 73.8°F, Relative humidity is 33.7%.

Signature:

Print Name: LISA KOIVASCH

EHS–International, Inc.
13228 NE 20th Street, Suite 100
Bellevue, WA 98005
Phone: (425) 455-2959 . (800) 666-2959. Fax: (425) 646-7247

DAILY LOG

Observations Continued:

12-12:30 Crew takes lunch
2:00 Collect air samples. Wind reading from the north is 381 fpm. Relative humidity is 30% and Temperature is 77.8°F.
3:00 Drop off samples at Fed Ex.

Signature: _____
Print Name: LISA KOLLASCH

GALSON
LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 16, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328120

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 13, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received : 13-SEP-14
Date Analyzed : 15-SEP-14
Report ID : 849508

Account No.: 13697
Login No. : L328120

Arsenic

Sample ID	Lab ID	Air Vol liter	Total ug	Conc mg/m3
10663-AS-14-09-12-01	L328120-1	720	<0.30	<0.00042

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.30 ug
Analytical Method : mod. NIOSH 7300/mod. OSHA ID-125G; ICP
OSHA PEL : 0.01 mg/m3 (TWA)
Collection Media : Filter

Submitted by: GJM/MLH
Approved by : mlh
Date : 16-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received: 13-SEP-14
Date Analyzed: 15-SEP-14

Account No.: 13697
Login No. : L328120

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328120 (Report ID: 849508):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(26), im-mwvfilt(20)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Arsenic	+/-9.6%	105%

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON

771144765401
Date:09/13/14
Shipper:FEDEX
Initials:CMS
Prep:PSY315527

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com

Invoice To*: Admin
EHSI
R2
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☐ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☒ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project*: 10663-02 Sampled by: Lisa Kollasch

Comments:

List description of industry or Process/interferences present in sampling area: Excavation of contaminated soils

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maxmium of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: L, ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10663-AS-2014-09-12-01	9-12-14	37mm 0.8µm MW	720	L	Arsenic	Mod. NIOSH 7300	

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	9-12-14	2:30p	Received by:			
Relinquished by:				Received by:		9/13/14	941

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-12-14
EHSI Project No. 10663-02
Project Name Gasworks Kite Hill
Technician Lisa Kollasch
Analyte ~~Lead~~ Arsenic

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663-AS-2014-09-12-01	NW area at fence line	P483	2.0	2.0	2.0		7:44 / 1:44	360	720	37 mm 0.8 Mn	Contaminated soil excavation.

Rotameter L763 Rotameter Correction Factor Y = 1.108 X + - 0.084

Technician Certification

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date 9-12-14 Page 1 of 1

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 16, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328118

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 13, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received : 13-SEP-14
Date Analyzed : 16-SEP-14
Report ID : 849558

Account No.: 13697
Login No. : L328118

Benzene Soluble Particulate

Sample ID	Lab ID	Air Vol liter	Total mg	Conc mg/m3
10663-PAH-14-09-12-1	L328118-1	736	<0.060	<0.082

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.060 mg
Analytical Method : mod. OSHA 58; Gravimetric
OSHA PEL : 0.2 mg/m3 (TWA)
Collection Media : 225-7 GFF

Submitted by: PJD
Approved by : DMM
Date : 16-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received: 13-SEP-14
Date Analyzed: 16-SEP-14

Account No.: 13697
Login No. : L328118

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328118 (Report ID: 849558):
SOPs: ic-ctpv(16)
The Benzene Soluble Particulate results are considered accurate to within +/- 20.5% based on a 95% confidence interval (k=2). This method has an average recovery of 98.5%. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client?

Client Account No.*: 13697

Report To*.: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☐ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☒ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project: 10663-02 Sampled by: Lisa Kollasch

Comments:

List description of industry or Process/interferences present in sampling area: excavation of contaminated soil

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maxmium of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: L, ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10663-PAH-2014-09-12-01	9-12-14	37mm GFF	736	L	Coal Tar Pitch Volatiles	OSHA 58	

Samples Received in Light Sensitve Material: Yes or No

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: If requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	9-12-14	2:30pm	Received by:			
Relinquished by:				Received by:		9/13/14	941

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-12-14
EHSI Project No. 10663-02
Project Name Gasworks Kite Hill
Technician Lisa Kollasch
Analyte PAH

PAH AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663-PAH-2014-09-12-01	NW area at fenceline	P143	2.0	2.0	2.0		7:36 / 1:44	368	736	37 mm GFF & PC	cont. soil excavation.

Rotameter R763 Rotameter Correction Factor Y = 1.108 X + -0.084

Technician Certification:

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date: 9-12-14 Page 1 of 1

Page 5 of 5 Report Reference: 1 Generated: 16 SEP 14 12:09

GALSON LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 16, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328119

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 13, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received : 13-SEP-14
Date Analyzed : 15-SEP-14
Report ID : 849471

Account No.: 13697
Login No. : L328119

Benzene

Sample ID	Lab ID	Time minutes	Front ug	Back ug	Total ug	Conc mg/m3	ppm
10663-BENZ-09-05-01	L328119-1	364	<2	<2	<2	<0.2	<0.05

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 2 ug
Analytical Method : mod. NIOSH 1501; GC/FID BADGE
OSHA PEL : 1 ppm (TWA)
Collection Media : M3M-3520

Submitted by: sab
Approved by : nkp
Date : 16-SEP-14 NYS DOH # : 11626
QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 12-SEP-14
Date Received: 13-SEP-14
Date Analyzed: 15-SEP-14

Account No.: 13697
Login No. : L328119

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328119 (Report ID: 849471):
Total ug corrected for a desorption efficiency of 100%.
Please note that back media results above the LOQ have been multiplied by a factor of 2.2 in all "total ug" calculations (as specified in the 3M method).
SOPs: GC-SOP-12(8), GC-SOP-16(13), GC-SOP-9(12)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Benzene	+/-6.4%	94.1%

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com

Invoice To*: Admin
EHSI
R3
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☐ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☒ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project: 10663-02 Sampled by: Lisa Kollasch

Comments:

List description of industry or Process/interferences present in sampling area: Excavation of contaminated soil

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: L, ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10da3-Benzene-2014-09-05-01	9-12-14	3m 3520	364	1 min	Benzene	NIOSH 1501	

^Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	9-12-14	2:30	Received by:			
Relinquished by:				Received by:		9/13/14	941

Samples received after 3pm will be considered as next days business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page ___ of ___

ehsi
EHS–International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-12-14
EHSI Project No. 10063-02
Project Name Gasworks Kite Hill
Technician Lisa Kollasch
Analyte Benzene

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10063-Benzene-2014-09-12-01	NW area On fence	N/A	NA	NA	NIA	NIA	7:35 / 1:39pm	364	NA	3M 3520 badge	badge # WG7632

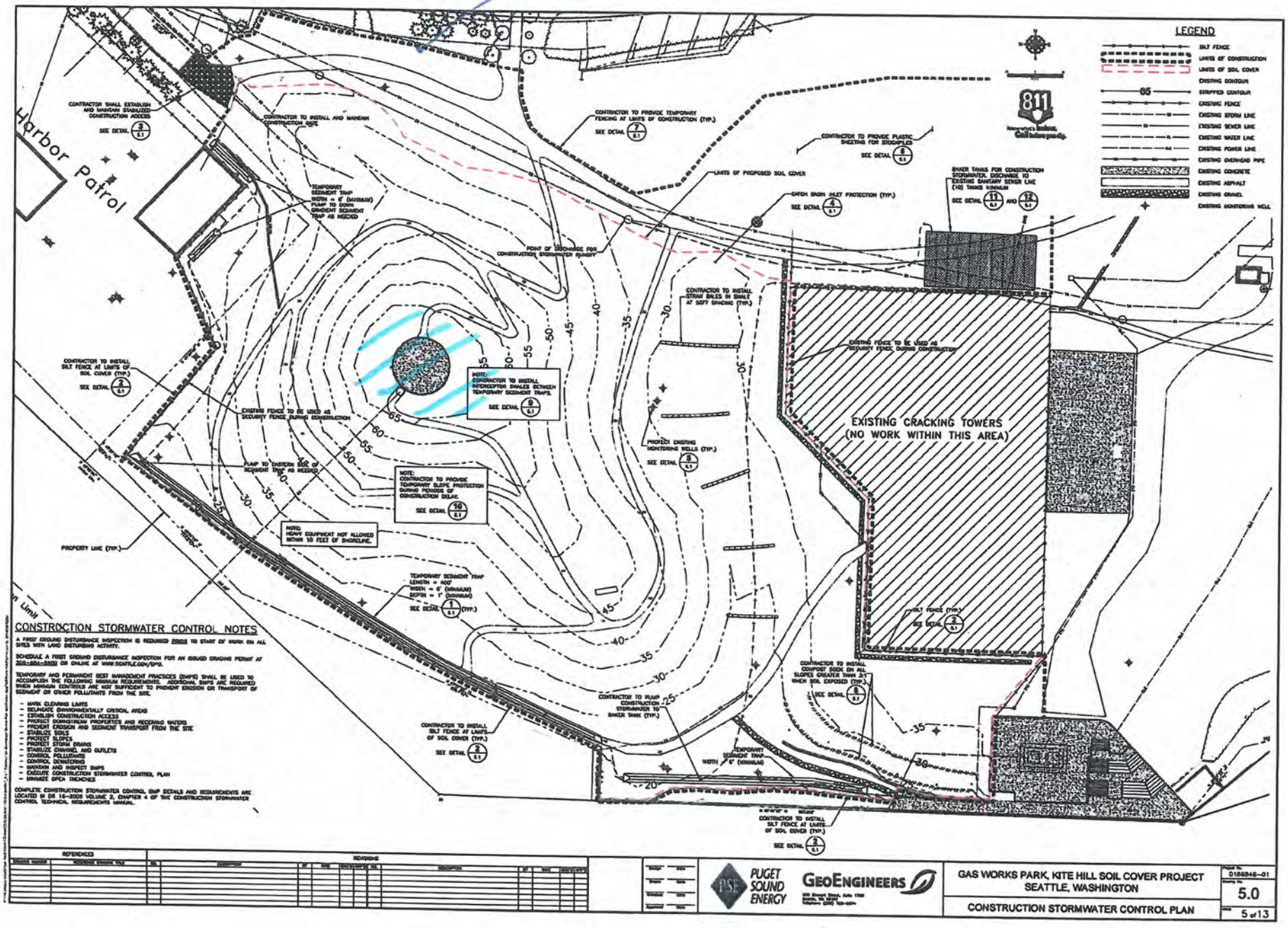
Rotameter R763 Rotameter Correction Factor Y = 1.108 X + -0.084

Technician Certification

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date 9-12-14 Page 1 of 1

9-12-14



Approximate Work Area location.

EHS–International, Inc.
13228 NE 20th Street, Suite 100
Bellevue, WA 98005
Phone: (425) 455-2959 . (800) 666-2959. Fax: (425) 646-7247

DAILY LOG

Date: 9-17-14 Project #: 10663-02 Project: Gasworks

Time: 7:30 Weather: Rain / cloudy Gen. Con. Water Construction

Shift: Day Temp: 70°F Abate Con. Geo Engineers

Site Conditions:

Work in Progress: excavating, stockpiling and offloading cont soil

Environmental Controls: water, barriers

Materials Disposed: _____

Personnel:

Contractor Manpower _____ Site Superintendent Theo Leonard

Visitors _____

Observations: (Time, events, discussions, corrective actions, progress, names, contact #'s, locations, etc.)

8:30 air samples started along North fence line.

9:00 - no wind noted. Temp = 70.6°F, Relative Humidity = 65.1%.

10:30 - Wind from the SW at 232 fpm, Temp = 68.9°F, Relative Humidity = 67.4%.

1:00 - Wind from S-SW at 389 fpm, Temp = 77°F, Relative Humidity = 55.7%.

2:30 - Wind from N-NW at 481 fpm, Temp = 76.8°F, Relative Humidity = 51.6%.

Air samples for Arsenic, Benzene and PAH's collected and transported to Fed Ex for shipment to Nelson Labs

Signature: _____

Print Name: LISA KOLLBASCH

GALSON LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 18, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328521

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 18, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received : 18-SEP-14
Date Analyzed : 18-SEP-14
Report ID : 850020

Account No.: 13697
Login No. : L328521

Arsenic

Sample ID	Lab ID	Air Vol liter	Total ug	Conc mg/m3
10663-AS-2014-09-17	L328521-1	720	<0.30	<0.00042

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.30 ug
Analytical Method : mod. NIOSH 7300/mod. OSHA ID-125G; ICP
OSHA PEL : 0.01 mg/m3 (TWA)
Collection Media : Filter

Submitted by: gjm/mlh
Approved by : mlh
Date : 18-SEP-14
Supervisor: CJU
NYS DOH # : 11626
QC by: AMD

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received: 18-SEP-14
Date Analyzed: 18-SEP-14

Account No.: 13697
Login No. : L328521

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328521 (Report ID: 850020):
Reported results reflect elemental analysis of the requested metals. Certain compounds may not be solubilized during digestion, resulting in data that is biased low.
SOPs: MT-SOP-9(26), im-fitler(19)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Arsenic	+/-9.6%	105%

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

(R2)

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com & LisaK@ehsintl.com

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

3/55827

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☑ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project: 10663-02 Sampled by: Lisa Kollasch

Comments: Please send unlocked pdf reports.

List description of industry or Process/interferences present in sampling area: Offloading contaminated soil. Excavating & stockpiling.

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium (W) MCE BPC	Sample Volume Sample Time Sample Area*	Sample Units*: L, ml, min, in2, cm2, ft2	Analysis Requested*	Method Reference*	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10663-As-2014-09-17	09/17/14	37 mm 0.8um	720'	L	Arsenic	Mod,NIOSH 7300	

*Galson Laboratories will subsitute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	09/17/14	3:30	Received by:	Teresa Covert/Teresa Covert	9/18/14	09:30
Relinquished by:				Received by:			

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 1

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-17-14
EHSI Project No. 10663-02
Project Name Gasworks Park
Technician Lisa Kollasch
Analyte Arsenic

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663-As-2014-09-17	North, at fence line	P143	2.0	2.0	2.0		8:27 / 2:27	360	720	37mm 0.8um	OFF loading contaminated soil. Excavating & stockpiling

Rotameter R763 Rotameter Correction Factor Y = 1.108 X - 0.084

Technician Certification:

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date: 9-17-14 Page 1 of 1

GALSON LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 19, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328526

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 18, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received : 18-SEP-14
Date Analyzed : 18-SEP-14
Report ID : 850108

Account No.: 13697
Login No. : L328526

Benzene

Sample ID	Lab ID	Time minutes	Front ug	Back ug	Total ug	Conc mg/m3	ppm
10663-BENZ-14-09-17	L328526-1	360	<2	<2	<2	<0.2	<0.05

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 2 ug
Analytical Method : mod. NIOSH 1501; GC/FID BADGE
OSHA PEL : 1 ppm (TWA)
Collection Media : M3M-3520

Submitted by: sab
Approved by : tlh
Date : 19-SEP-14 NYS DOH # : 11626
Supervisor: KLD QC by: KSB

< -Less Than
> -Greater Than
NA -Not Applicable
mg -Milligrams
ug -Micrograms
ND -Not Detected
m3 -Cubic Meters
l -Liters
ppm -Parts per Million
kg -Kilograms
NS -Not Specified

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received: 18-SEP-14
Date Analyzed: 18-SEP-14

Account No.: 13697
Login No. : L328526

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328526 (Report ID: 850108):
Total ug corrected for a desorption efficiency of 100%.
Please note that back media results above the LOQ have been multiplied by a factor of 2.2 in all "total ug" calculations (as specified in the 3M method).
SOPs: GC-SOP-12(8), GC-SOP-16(13), GC-SOP-9(12)

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated uncertainty applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process.

Parameter	Accuracy	Mean Recovery
Benzene	+/-6.4%	94.1%

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

R19

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com & LisaK@ehsintl.com

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

14-100994 fax 9/18/14 315527

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☑ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project: 10663-02 Sampled by: Lisa Kollasch

Comments: Please send unlocked pdf reports.

List description of industry or Process/interferences present in sampling area: offloading contaminated soil. Excavating & stockpiling

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: l, ml,min,in2,cm2,ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10663-Benzene-2014-09-17	09/17/14	3m 3520	360	min.	Benzene	NIOSH 1501	

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ -Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	09/17/14	3:30	Received by:	Teresa Overstreet/Teresa Overst	9/18/14	0925
Relinquished by:				Received by:			

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 1

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-17-14
EHSI Project No. 10663-02
Project Name Gasworks Park
Technician Lisa Kollasch
Analyte Benzene

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663-Benzene-2014-09-17	North, at fence line	NA	NA	NA	NA	NA	8:23 / 2:23	360	NA	3M 3520 Badge	Badge ID WG7566 OFF loading cont. soil excavating & stockpiling

Rotameter NA Rotameter Correction Factor —

Technician Certification:

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date: 9-17-14 Page — of —

GALSON LABORATORIES

Mr. Herb Brod
EHS-International, Inc.
13228 NE 20th Street
Suite 100
Bellevue, WA 98005

September 19, 2014

DOH ELAP #11626
AIHA-LAP #100324

Account# 13697

Login# L328523

Dear Mr. Brod:

Enclosed are the analytical results for the samples received by our laboratory on September 18, 2014. All test results meet the quality control requirements of AIHA-LAP and NELAC unless otherwise stated in this report. All samples on the chain of custody were received in good condition unless otherwise noted.

Results in this report are based on the sampling data provided by the client and refer only to the samples as they were received at the laboratory. Unless otherwise requested, all samples will be discarded 14 days from the date of this report, with the exception of IOMs, which will be cleaned and disposed of after seven calendar days.

Current Scopes of Accreditation can be viewed at www.galsonlabs.com in the accreditations section under the "about Galson" tab.

Please contact Pamela Weaver at (888) 432-5227, if you would like any additional information regarding this report.

Thank you for using Galson Laboratories.

Sincerely,

Galson Laboratories

Mary G Unangst

Mary G. Unangst
Laboratory Director

Enclosure(s)

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY ANALYSIS REPORT

Client : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received : 18-SEP-14
Date Analyzed : 19-SEP-14
Report ID : 850152

Account No.: 13697
Login No. : L328523

Benzene Soluble Particulate

Sample ID	Lab ID	Air Vol liter	Total mg	Conc mg/m3
10663-PAH-2014-09-17	L328523-1	720	<0.060	<0.083

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of quantitation: 0.060 mg
Analytical Method : mod. OSHA 58; Gravimetric
OSHA PEL : 0.2 mg/m3 (TWA)
Collection Media : 225-7 GFF

Submitted by: CTW
Approved by : DMM
Date : 19-SEP-14 NYS DOH # : 11626
Supervisor: JGC QC by: KSB

< -Less Than mg -Milligrams m3 -Cubic Meters kg -Kilograms
> -Greater Than ug -Micrograms l -Liters NS -Not Specified
NA -Not Applicable ND -Not Detected ppm -Parts per Million

GALSON LABORATORIES

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.galsonlabs.com

LABORATORY FOOTNOTE REPORT

Client Name : EHS-International, Inc.
Site : GasWorks Park
Project No. : 10663-02

Date Sampled : 17-SEP-14
Date Received: 18-SEP-14
Date Analyzed: 19-SEP-14

Account No.: 13697
Login No. : L328523

Unless otherwise noted below, all quality control results associated with the samples were within established control limits or did not impact reported results.

Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceeding the final result column may have been rounded in order to fit the report format and therefore, if carried through the calculations, may not yield an identical final result to the one reported.

The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).

Unless otherwise noted below, reported results have not been blank corrected for any field blank or method blank.

L328523 (Report ID: 850152):
SOPs: ic-ctpv(16)
The Benzene Soluble Particulate results are considered accurate to within +/- 20.5% based on a 95% confidence interval (k=2). This method has an average recovery of 98.5%. The estimated uncertainty applies to the media, technology, and SOP(s) referenced in this report and does not account for any uncertainty associated with the sampling process.

< -Less Than	mg -Milligrams	m3 -Cubic Meters	kg -Kilograms
> -Greater Than	ug -Micrograms	l -Liters	NS -Not Specified
NA -Not Applicable	ND -Not Detected	ppm -Parts per Million	

R20

GALSON LABORATORIES
6601 Kirkville Rd
East Syracuse, NY 13057
Tel: (315) 432-5227
888-432-LABS (5227)
Fax: (315) 437-0571
www.galsonlabs.com

☐ New Client?

Client Account No.*: 13697

Report To*: Herb Brod
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.*: (425) 455-2959
Cell No.: (425) 766-1546
Email Results to: Herb Brod
Email address: herbb@ehsintl.com & LisaK@ehsintl.com

Invoice To*: Admin
EHSI
13228 NE 20th St. #100
Bellevue, WA 98005-2049
Phone No.: (425) 455-2959
Email: shelbyn@ehsintl.com
P.O. No.: 10663-02
Credit Card: ☐ Card on File ☐ Call for Credit Card Info.

☑ Samples submitted using the FreePumpLoan™ Program ☐ Samples submitted using the FreeSamplingBadges™ Program

Need Results By:	(surcharge)
☐ Standard	0%
☐ 4 Business Days	35%
☐ 3 Business Days	50%
☐ 2 Business Days	75%
☐ Next Day by 6pm	100%
☑ Next Day by Noon	150%
☐ Same Day	200%

Site Name: GasWorks Park Project: 10663-02 Sampled by: Lisa Kollasch

Comments: Please send unlocked pdf reports.

List description of industry or Process/Interferences present in sampling area: offloading contaminated soil. excavating & stockpiling.

State samples were collected in (e.g., NY): WA

Please indicate which OEL this data will be used for: ☑ OSHA PEL ☐ ACGIH TLV ☐ Cal OSHA ☐ MSHA ☐ Other (specify):

Sample Identification* (Maximum of 20 Characters)	Date Sampled	Collection Medium	Sample Volume Sample Time Sample Area*	Sample Units*: L, ml, min, in2, cm2, ft2	Analysis Requested*	Method Reference^	Hexavalent Chromium Process (e.g., welding plating, painting, etc.)*
10663-PAH-2014-09-17	09/17/14	37mm GFF	720		Coal Tar Pitch Volatiles	OSHA 58	

Samples Received in Light Sensitive Material: (Yes) or No

^Galson Laboratories will subsititute our routine/preferred method if it does not match the method listed on the COC unless this box is checked: ☐ Use method(s) listed on COC

For metals analysis: if requesting an analyte with the option of a lower LOQ, please indicate if the lower LOQ is required (only available for certain analytes - see SAG):

For crystalline silica: form(s) of silica needed must be indicated (Quartz, Cristobalite, and/or Tridymite)*:

Chain of Custody	Print Name/Signature	Date	Time		Print Name/Signature	Date	Time
Relinquished by:	Lisa Kollasch /	09/17/14	3:30	Received by:	Teresa Covert / Teresa Covert	9/18/14	09:28
Relinquished by:				Received by:			

Samples received after 3pm will be considered as next day's business
* Required fields, failure to complete these fields may result in a delay in your samples being processed.

Page 1 of 1

Page 4 of 5 Report Reference: Generated:19-SEP-14 11:35

ehsi
EHS-International, Inc.
13228 NE 20TH St., Ste. 100
Bellevue, WA 98005
Tel: 425-455-2959
Fax: 425-646-7247

Date 9-17-14
EHSI Project No. 10663-02
Project Name Gasworks Park
Technician Lisa Kollasch
Analyte PAH

AIR MONITORING SAMPLING SHEET

Sample #	Location	Pump ID	Indicated Flow Rate (LPM) Initial	Indicated Flow Rate (LPM) Final	Ave. Indicated Flow Rate	Ave. Actual Flow Rate	On / Off	Elapsed Time (min.)	Total Liters	Media	Activities/Comments
10663-PAH 2014-09-17	North, at fence line	P483	2.0	2.0	2.0		8:26 / 2:26	360	720	37mm GFF 2 pc	Offloading of contaminated soil. Excavation & stockpiling

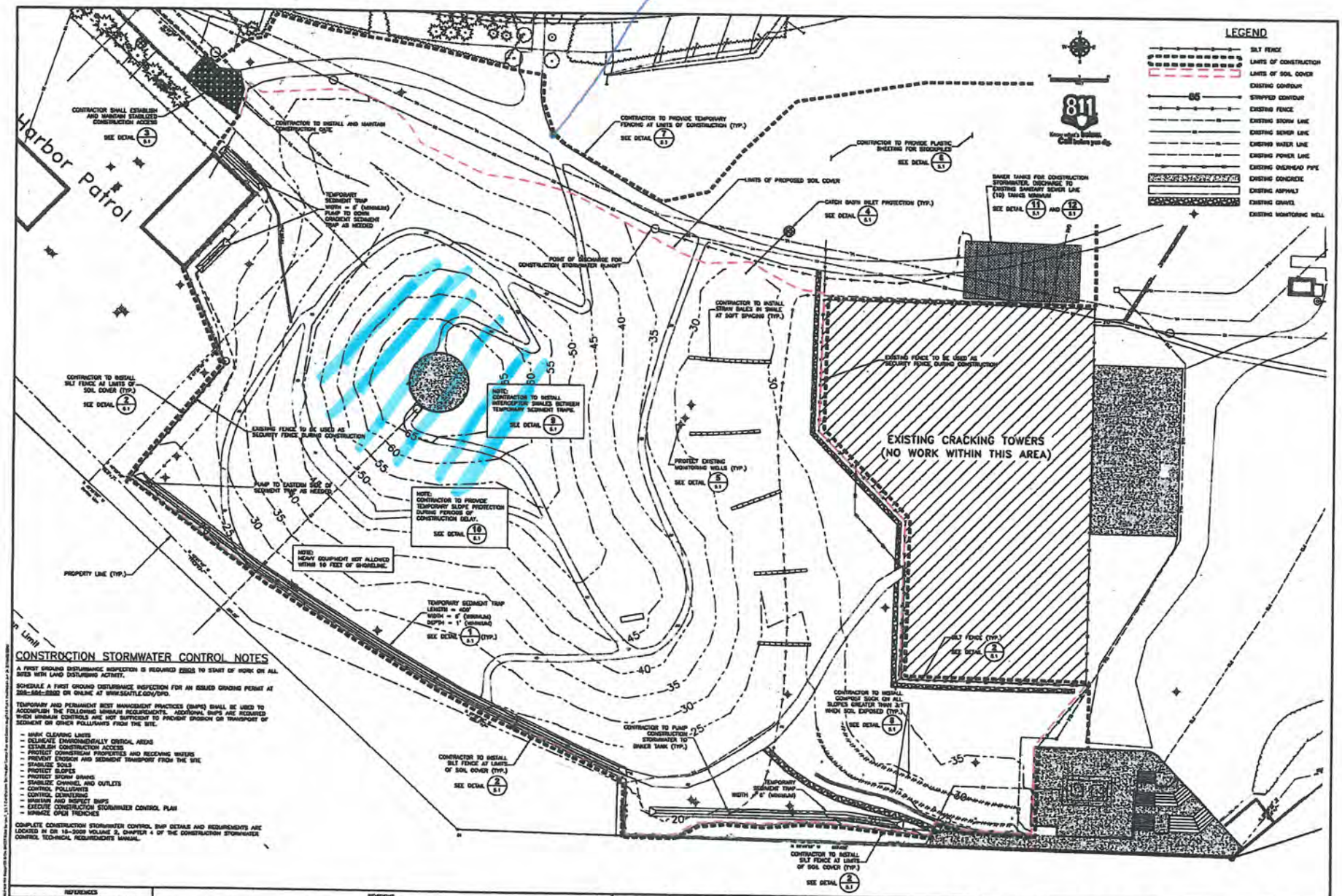
Rotameter R763 Rotameter Correction Factor Y = 1.101 X$ - 0.054

Technician Certification:

I certify that the above samples were taken in compliance with applicable standards, regulations and project specifications.

Technician Signature [signature] Date: 9-17-14 Page ___ of ___

9-17-14



CONSTRUCTION STORMWATER CONTROL NOTES

A FIRST GROUND DISTURBANCE INSPECTION IS REQUIRED PRIOR TO START OF WORK ON ALL SITES WITH LAND DISTURBING ACTIVITY.

SCHEDULE A FIRST GROUND DISTURBANCE INSPECTION FOR AN ISSUED GRADING PERMIT AT 206-684-8900 OR ONLINE AT WWW.SEATTLE.GOV/DPD.

TEMPORARY AND PERMANENT BEST MANAGEMENT PRACTICES (BMPS) SHALL BE USED TO ACCOMPLISH THE FOLLOWING MINIMUM REQUIREMENTS. ADDITIONAL BMPS ARE REQUIRED WHEN MINIMUM CONTROLS ARE NOT SUFFICIENT TO PREVENT EROSION OR TRANSPORT OF SEDIMENT OR OTHER POLLUTANTS FROM THE SITE.

- MARK CLEARING LIMITS
- DELINEATE ENVIRONMENTALLY CRITICAL AREAS
- ESTABLISH CONSTRUCTION ACCESS
- PROTECT DOWNSTREAM PROPERTIES AND RECEIVING WATERS
- PREVENT EROSION AND SEDIMENT TRANSPORT FROM THE SITE
- STABILIZE SOILS
- PROTECT SLOPES
- PROTECT STORM DRAINS
- STABILIZE CHANNEL AND OUTLETS
- CONTROL POLLUTANTS
- CONTROL DEWATERING
- MAINTAIN AND INSPECT BMPS
- EXECUTE CONSTRUCTION STORMWATER CONTROL PLAN
- MINIMIZE OPEN TRENCHES

COMPLETE CONSTRUCTION STORMWATER CONTROL BMP DETAILS AND REQUIREMENTS ARE LOCATED IN DR 16-2009 VOLUME 2, CHAPTER 4 OF THE CONSTRUCTION STORMWATER CONTROL TECHNICAL REQUIREMENTS MANUAL.

REFERENCES

REVISIONS

PUGET SOUND ENERGY

GEOENGINEERS

GAS WORKS PARK, KITE HILL SOIL COVER PROJECT
SEATTLE, WASHINGTON

CONSTRUCTION STORMWATER CONTROL PLAN

Project No. 0186846-01
Drawing No. 5.0
Sheet 5 of 13

Approximate Work Area Location

APPENDIX P
Irrigation Coverage Test Documentation

100 S. King St j.a. brennan associates PLLC
t. 206.583.0620 f. 206.583.0623

Date 5/18/2015

PROJECT: GASWORKS KITE HILL SOIL COVER PROJECT

CONSTRUCTION FIELD MEETING

FIELD OBSERVATIONS

MEETING NOTES

Prepared by:

J.A. Brennan Associates

Meeting Date: 5-13-2015

A. **Attendees:**

1. Karen Galt (COS Parks)
2. Kevin Blanchard (COS Parks)
3. Drew Coombs (JA Brennan)
4. Robert Reynolds (Wyser)
5. Ignesio (Wyser)

B. **Meeting Purpose:**

1. Irrigation coverage test.

C. **Site walk and Observations:**

1. Generally looked great.
2. Zone 4 – raise south head at fence corner
3. Zone 12 – seems to be missing one head
4. Zone 17 – adjust angle of north head more vertical (was short spraying on downhill side)
5. Zone 21 – lower north head at gravel path edge
6. Zone 22 – had broken line so were unable to test
7. OLD zone 19 – two heads from old zone at NW corner of cracking tower fence due to duplicated coverage by new zones 21 and 22; to be capped.
8. OLD zone 2 and 3 (staging area) –2 or 3 broken heads had been replaced with new ones
9. Contractor moved blue master valve wire to station 24 and manually turned on station 2; by activating #24 at clock, we could observe the master valve close and stop the water flow on #2, as Maxicom would do in its “mainline break” or “stuck valve” situation.
10. Controller was left to run locally until handed over to Parks, in Auto on dial and a 4-day rain delay.
11. Please advise when irrigation scheduling is to be handed over to Parks.
12. Flow monitor was calibrated for 2” flow sensor and was reporting flow while running.

Notes to Parks District for future monitoring:

Zone 19/20 by viewpoint is very wet near vault lid

Zones 6 and 8 – may be quickly overtaking by blackberries from shoreline, may need frequent monitoring/cutting back

APPENDIX Q
Irrigation Controller Trenching Coordination Diagram

Notes
1. Handwork will be required where trenching within tree root zone.
2. Tree roots smaller than 2 inches in diameter shall be cleanly cut flush with saw along the edge of the trench tunnel.
3. Air spade or water jet method are preffered option to remove soil from around roots.
4. Ripping or tearing of tree roots will not be allowed.
5. Depth of pipe for electrical power to irrigation controller shall meet minimum to City code requirements.
6. Protect and fence trench work area.
7. Coordinate work around trees with Park Aroborist

Approximate location of existing cabinet

Sleeve under existing path with ductile iron pipe

alignment for new power to proposed controller

Approximate path location

Coordinate proposed power alignment with existing irrgation and other utilities

existing tree grove

existing tree grove

Sensitive root zone. Handwork will be required for trenching. Protect trees with fencing. Coordinate fence location with Parks arborist.

Existing London Plane Trees

proposed controller location

Alignment to run power

trench for power to controller

GAS WORKS PARK - SOIL COVER PROJECT
POWER ALIGNMENT FOR NEW CONTROLLER
FOR COORDINATION PURPOSES ONLY
Date: 10-17-2014
PREPARED BY: J.A. Brennan Associates

SCALE: 1" = 30'
0' 30' 60'

j.a. brennan associates PLLC
Landscape Architects & Planners

APPENDIX R
Irrigation Operations and Maintenance Manual

H.D. FOWLER COMPANY

O & M MANUAL:

GAS WORKS

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5898
(360) 658-5305 Fax

H.D. FOWLER COMPANY

O&M Manual Index

1. C509 Resilient Wedge Gate Valves
2. 950XLT2 Double Check Valve Assembly
3. 600XL Pressure Reducing Valve
4. 3100 Series Globe Valve
5. Model VB Brass Valve
6. 950 Series Brass Valve
7. 640 Series Rotors
8. E/One Extreme Grinder Pump
9. Orion Water Endpoint W/M25 Meter
10. Fiberglass Valve Enclosures
11. Yard Hydrant

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5898
(360) 658-5305 Fax

www.hdfowler.com

C509
RESILIENT WEDGE GATE VALVES

H.D. FOWLER COMPANY

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

M&H Valve Co.

Division of McWANE, Inc.

605 West 23rd Street
P.O. Box 2088
Anniston, AL 36202
Telephone (256) 237-3521
Fax (888) 549-5309

M&H VALVE RESILIENT WEDGE GATE VALVE MAINTENANCE MANUAL

The M&H Valve Resilient Wedge Gate Valve requires no routine maintenance except that the valve must be operated at least once a year to prevent stem binding due to rust and encrustation.

M&H Valve does not recommend stocking any spare parts for the Resilient Wedge Gate Valve.

To obtain correct components it is necessary to furnish the following information to M&H Valve or an authorized distributor.

1. Style (4000 Series - C-509 & 7000 Series - C-515)
2. Valve Size.
3. Year of manufacture.

INSTALLATION:

Install the resilient wedge gate valve like any other gate valve, following the recommendations of AWWA and N.E.P.A.

BEFORE INSTALLING THE VALVE:

1. Wipe away any dirt and grit from the inside of the valve

2. Flush the line completely.

3. Check the operation of the valve – full open to full closed when installing the valve.

4. Cover the valve with burlap or similar material while backfilling to protect the coating after installing the valve.

5. Open the valve about five turns and allow the flow an opportunity to flush any trash and debris from the line.

GENERAL OPERATION:

The operation of resilient wedge gate valve is not like that of a double disc gate valve. Resilient wedge gate valves require considerable torque to fully shut off the flow through the valve but are easily opened. Closing torque to close the valve can be expected to be as follows:

2”	20 ft-lb	6”	110 ft-lb
2½”	28 ft-lb	8”	150 ft-lb
3”	52 ft-lb	10”	185 ft-lb
4”	75 ft-lb	12”	225 ft-lb

TOOLS:

All repair of a M&H Valve resilient wedge gate valve may be accomplished with only:

1. A ½” drive socket set.
2. A 12” adjustable (“Crescent”) wrench.
3. A small pry bar (a soft faced hammer is occasionally useful).

STOCKING SPARE PARTS:

M&H Valve does not recommend stocking any repair parts for resilient wedge valves.

COMPONENT REPLACEMENT:

If the valve has not been abused, the stem packing is the only item that might ever be replaced and instructions are included below.

There have been occasions where a disc has been replaced and instructions for disc replacement are included but this should not be considered normal maintenance.

PACKING PROCEDURE:

I. Non-Rising Stem (NRS) Valves:

Before beginning repacking, contact M&H Valve or an authorized distributor to obtain:

A. Stem sealing o-rings: - #R6 (2) req’d.
B. One stuffing box gasket/o-ring – #R7 (1) req’d,

-- NRS Repacking Procedure:

1. Open the valve tightly (50 ft-lb for valves 3” and smaller, 100 ft-lb for valves 4” and larger).

2. Remove the bolts retaining the stuffing box.

3. Gently pry the stuffing box from the valve (if necessary, separate the stuffing box from the cap (bonnet) by tapping the stuffing box with a soft faced hammer).

4. Remove and replace the o-rings. Wipe all grit and dirt from the bore of the stuffing box and stem. Lubricate the bore of the stuffing box, the stem, and the stem seal o-rings before installing the stem seal o-rings.

Two o-rings (item #R6) on the shank of the stem and

One o-ring/gasket seal (item #R7) on the Bottom of the stuffing box. It is desirable to Retain the gasket/o-ring with "Plybond" or similar cement during reinstallation.

5. Replace the stuffing box – tighten all bolts uniformly and carefully so that the stuffing box is flat and snug against the cap (bonnet) and the gap between the cap and stuffing box does not exceed 0.015" (normally there should be no gap) and is uniform. Check the stem for binding.

II. <u>Outside Screw & Yoke (OS&Y):</u>

Before attempting to repack the valve, first attempt to stop the leakage by tightening the brass nuts on the packing gland. Tighten both nuts snugly and uniformly to about 60 ft-lb. Operate the valve a time or two to determine if the leakage has stopped.

Before beginning repacking, contact M&H Valve or an authorized distributor to obtain packing.

--OS&Y Packing Procedure:

1. Open the valve tightly (50 ft-lb for valves 3" and smaller, 100 ft-lb for valves 4" and larger)

2. Remove the nuts retaining the packing gland. Item # R8.

3. Lift the packing gland. If necessary, lever the packing gland with a crow bar or similar tool.

4. Remove and replace the packing.

Engineering prefers to use two threaded rods the same diameter as the packing gland bolts and about 6" long. Remove the bolts from the packing gland and replace them with threaded rods through the packing gland and place nuts on the free ends of the threaded rods. Tighten the nuts with a deep well socket until all leakage stops then remove the rods and replace them with the packing gland bolts and nuts.

5. Reinstall the packing gland bolts and nuts, tightening the nuts uniformly, one side then the other so that the packing gland pulls down evenly. Tighten the nuts until all leakage past the packing stops. Operate the valve once or twice to check for stem binding and to be certain that there is no leakage.

RESILIENT DISC REPLACEMENT:

1. It is necessary to take the valve fully out of service to replace the disc but it is not necessary to remove the valve from the line.

2. It is very unusual to have to replace a disc. Discs normally can be expected to last for many years and thousands of cycles. Before replacing a disc, first check to see if the operation personnel are closing the valve tightly. If the valve is closed tightly, open the valve about five turns and attempt to cause the maximum flow through the valve to flush any debris from the seating area. If it is necessary to replace a disc suspect that there is some systematic problem causing the disc failure such as stones in the line.

3. Before attempting to replace the disc, contact M&H Valve or an authorized distributor to obtain:

   A. Cover O-ring
   B. Disc

-- Disc Replacement Procedure:

   1. Partially open the valve.

   2. Remove the cap (bonnet) bolts and nuts.

   3. Lift the cap, stem, stuffing box, disc assembly from the body. .

   4. Remove and replace the disc.

   5. Replace the cap sealing o-ring (not always necessary) – Retain the o-ring with a flexible adhesive such as "Plybond".

   6. Replace the cap, stem, stuffing box, disc assembly – taking care to start the disc into the guides cast into the body.

7. Place the bolts through the holes in the body and cap – taking care to line the bolt holes up.

8. Snug the cap bolts finger tight and then tighten them. First tighten two bolts diagonally opposite with wrist torque. Then go to another bolt opposite the first two and tighten. Then work around the bolt pattern tightening the bolts.

9. Operate the valve fully open to fully closed before backfilling.

7. Place the bolts through the holes in the body and cap – taking care to line the bolt holes up.

8. Snug the cap bolts finger tight and then tighten them. First tighten two bolts diagonally opposite with wrist torque. Then go to another bolt opposite the first two and tighten. Then work around the bolt pattern tightening the bolts.

9. Operate the valve fully open to fully closed before backfilling.

LIMITED WARRANTY

M&H AWWA C509 RESILIENT WEDGE GATE VALVES (1993)

TEN YEAR LIMITED WARRANTY ON M&H VALVE RESILIENT WEDGE GATE VALVES

M&H Valve Company M&H Valve Company warrants that its Resilient Wedge Gate Valves will be free from defects in material and workmanship under normal and customary use and maintenance for a period of ten (10) years form the date of purchase, provided the hydrant is installed and maintained according to M&H Valve instructions, and applicable codes. The foregoing warranty does not cover failure of any part or parts from external forces, including but not limited to earthquake, vandalism, vehicular or other impact, application of excessive torque to the operating mechanism or frost heave.

Should any M&H Valve Company part or parts fail to conform to the foregoing warranty, M&H Valve shall, upon prompt written notice thereof, repair, or replace, F.O.B. point of manufacture, such defective part or parts. Purchaser shall, if requested, return the part or parts to M&H Valve, transportation prepaid. Purchaser shall bear all responsibility and expense incurred for removal, reinstallation and shipping in connection with any part supplied under the foregoing warranty.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS. IN NO EVENT SHALL M&H VALVE COMPANY BE RESPONSIBLE OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL LOSSES, DAMAGES OR EXPENSES.

KENNEDY VALVE

Division of McWane, Inc.

1021 East Water Street
P.O. Box 931
Elmira, New York 14902-0931
Telephone (607) 734-2211
Fax (607) 734-1003

KENNEDY VALVE RESILIENT SWING CHECK MAINTENANCE MANUAL

I. SELECTION

Check valves are for the prevention of backflow. Particular check valves perform additional services as follows:

1. Wafer check valves reduce the effect of water hammer (FM approved for such service).
2. Outside lever check valves may be fitted with a limit switch to detect flow.

General Service by Product

1. Figure 106/1106 Check Valve

   For service in other than fire protection lines and other than a connection to a potable water system where there is the possibility of a pollutant in the user's system back flowing into the potable water system. The 106/1106 check valves should not be used if water hammer is a known problem.

   a. Standard Figure 106/1106 brass to brass seating – General service, cold water, and non-shock up to 200 psi. Allows backflow (when new) up to 1 oz/hr/in nominal size at 200 psi back pressure (possibly more at low back pressure.
   b. Figure 106A/1106A - Resilient rubber to brass seating for General service, cold water, non-shock, at temperatures not exceeding 125°F. Provide drip tight sealing (when new). May allow some backflow at conditions of low backpressure (less than 5 ft H_2O backpressure) preferred for service when water hammer check cannot be used. Not for steam service.
   c. Outside lever (lever & spring/lever & weight) – occasionally used where water hammer might be a problem. Occasionally fitted with limit switches to detect flow. Rarely arranged to counter balance disc and reduce head loss at low flows. Levers may be a safety hazard for personnel if the valve opens suddenly.

2. Figure 126/1126 Check Valves

UL/FM approved for fire protection service. All other remarks for Figure 106/1106 valves apply. Differ from 106/1106 valves in body length and primary pressure rating.

3. Figure 706 Wafer Checks

   UL/FM approved for service where hammer is a problem. Fit between standard ASME/ANSI B16.1, Class 125 flanges. Drip tight sealing at backpressures greater than 5 fl. H_2O. Recommended for service where water hammer is a problem. Not for steam service.

4. Figure 426 Groove Check Valves

   UL/FM approved for service where an approved grove coupling is desired. This valve may be installed in either horizontal or vertical positions (flow up). All valves have a ½" NPT connection on the inlet size for installation of a ½" ball drip.

5. Figure 506 Resilient Hinged Check Valve

   This AWWA valve eliminates most problems associated with swing check valves. It is ideal for dirty water applications. Design is simple requiring no maintenance.

6. Figure 306/1306 Increasing Check Valve

   Utilizes same components as used in the 106/1106 swing check valve. Used where you need to increase the size of outlet side pipe.

7. Figure 206/1206 Cushion Check Valve

   Utilizes same internal components as the 106/1106 swing check valves but additionally has an air cylinder, which retards the closing of the check valve.

General Selection Information

1. For swing check valves to function properly and not be a source of chatter and water hammer, there must be at least ½ psi differential across the valve under normal flow conditions. When in doubt, undersize check valves.
2. For service in normal environments (clear water or dry air) at temperatures less than 100°F, resilient seated valves will allow less backflow and minimize water hammer vs. metallic seated valves.
3. For service other than clean water, consult the factory.
4. Levers may injure personnel and may be misused by persons to open the valve and allow backflow.

INSTALLATION

All Kennedy AWWA and UL/FM check valves bolt between ASME/ANSI B16.1, Class 125 flanges.

A. Swing Check Valves

1. Orientation

   a. Swing check valves are always installed with the hinge pin parallel to the place of the horizon and above the pipe centerline. Incorrect installation may result in binding, high head loss, and/or hanging open.
   b. Figure 106/1106 & 126/1126 check valves must be installed with the flow horizontal or the flow up.
   c. Outside lever swing check valves must be installed with the end of the lever that is fixed to the hinge pin higher than the opposite end. Failure to do this will certainly void the function of the check and may result in backflow.

2. Lifting

   Lift swing check valves with a sling around the body. Never lift valves by placing a bar or fork through the valve.

3. Clearances

   a. Allow two pipe diameters clearance minimum from the top of the cover for removal of the disc without removing the valve from line.
   b. Allow a minimum of one pipe diameter on one side of the valve and two and a-half (2-1/2) pipe diameters on the opposite side for removal of the hinge pin.
   c. If space is limited, consult factory for space limitations with outside lever valves. Levers may be a safety hazard for personnel and lever valves should be installed where personnel will not normally be in the area or guards should be installed.

4. Start-up

   The lines should be bled of air.

5. Gaskets

   See page 8.

B. Wafer Check Valves – C508

1. Orientation

   a. The hinge pin should be parallel to the plane of the horizon and above the centerline of the pipe.
   b. Wafer check may be installed horizontally or vertically with the flow up.

2. Gaskets

   The wafer check valves bolt between ASME/ANSI B16.1, Class 125 flanges and do not require gaskets (o-rings being provided).

3. Fasteners

   Threaded rods are usually used to fasten up the wafer check.

4. Lifting

   Some sizes may be provided with a threaded hole for inserting an eyebolt for lifting.

III SERVICE LIMITATIONS (Pressure Temperatures)

All valves, all services 32°F minimum working temperature non-shock.

A. UL/FM (Figure 126/1126) valves are for service at 175 psi maximum and 125°F maximum, water only.
B. Figure 106A/1106A (Resilient Seated Checks)

   1. Cold water service (125°F maximum)

      Sizes: 2" to 12" - 200 psi maximum
      Sizes: 14" to 24" - 150 psi maximum

C. Figure 106/1106 (Metallic Seated Checks)

   1. Cold water service (150°F maximum)

      Sizes: 2" to 12" - 200 psi maximum
      Sizes: 14" to 24" - 150 psi maximum

IV MAINTENANCE, CHECKING AND TESTING

A. Swing Checks

Excepting misuse and severe service, maintenance should be limited to the following:

1. Seating surfaces;
2. Bearing surfaces (hinge pins, hinges and side plugs);
3. Replacement of parts subject to corrosion; and
4. Lubrication and repacking of hinge pin stuffing boxes and o-ring stuffing boxes for outside lever valves.

Replacement of resilient disc rings (item #1) and lubrication and repacking of stuffing boxes for outside lever valves (item #4) are the only items subject to regular replacement maintenance or repair.

Replacement of parts subject to corrosion is unpredictable, as corrosion conditions are unknown and subject to many variables. Only the field service representative is qualified to judge when a part is corroded beyond use or safe limits and should be replaced; for replacement procedures see the section on replacing disc rings.

Kennedy Valve is not aware of a case where the bearing surfaces have been worn beyond use, but the possibility remains.

The field service representative must decide what item has worn and replace it.

1. Resilient Discs

    a. When to replace
        1. Replace resilient disc rings whenever leakage is judged excessive or at scheduled intervals.

    b. Replacement parts (order from factory for correct size)

        1. Disc ring
        2. Cover gasket or o-ring (advisable, but not always required, see Schedule Page 8 for sizes).
        3. Anaerobic sealants low strength “Loctite” or equal.
        4. O-ring(s) or gasket for disc bolt (advisable, but not always required).

    c. Special tools

        None

    d. Procedure (see 22 below for lever valves)

        1. Remove cover.

2. Remove side plugs. Use an appropriate size socket or box wrench not an adjustable or pipe wrench.
3. Drive hinge pin out with wooden dowel.
4. Lift hinge/disc assembly from valve ("V" notches in side of valve provide clearance for disc assembly).
5. Remove nut retaining disc plate. At this time, it might be advisable to remove the disc bolt and replace the o-ring(s) or gasket on the disc ball.
6. Lift the disc plate off. If the disc plate sticks, try tapping the back of the disc assembly with a soft faced mallet. Pry it off only as a last resort.
7. Remove the resilient disc ring.
8. Clean the "pocket" where the disc ring seats in the disc holder.
9. Replace the resilient disc ring (seat) with a new one, seating it flat and centered in the "pocket" in the disc holder. Do not use gasket sealant.
10. Clean the back of the disc plate.
11. Polish the seat ring in the valve body with crocus cloth or 600 grit wet/dry sandpaper (see Page 7).
12. If the disc bolt has been removed, lubricate the hole in the disc holder and the disc bolt with clean grease. Then carefully insert the disc bolt through the hinge and disc holder taking care not to twist or cut the o-ring(s).
13. Replace the disc holder by positioning it over the threaded portion of the disc bolt.
14. Replace the disc bolt nut and use a low strength anaerobic sealant. Do not over tighten the disc bolt nut. Tighten the nut only to the point that the disc plate makes a very slight impression into the resilient disc ring.
15. Carefully position the disc/hinge assembly through the cover flange and align with side plug holes and insert the hinge pin.
16. Replace the side plugs, starting by hand, and then tighten with 300 in-lb torque.
17. Inspect the cover sealing surfaces and clean if needed.
18. Inspect the cover gasket or o-ring and replace if needed (order from Kennedy Valve or see Schedule on Page 8).
19. Tighten the cover bolts in an alternating pattern, tightening two bolts at 180° snug, and then tighten two bolts 90° to the first two and 180° to each other, finally tightening all bolts tight. (See Schedule on Page 8 for specific torque.)
20. Pressurize and bleed the valve, checking for any leaks and tighten joints as necessary.
21. Procedure for outside lever valves; same as for valves without outside lever except:

a. Remove spring or weight before removing cover.
b. Loosen setscrew on lever and remove lever and key.
c. Remove side plug packing gland.
d. Remove side plug opposite hinge pin.
e. If setscrews are used on hinge, remove them.
f. Lubricate extended hinge pin.
g. Remove side plug stuffing box from valve.
h. Drive the hinge pin out with a hardwood dowel. (It may be necessary to heat the hinge, but this should be avoided if at all possible).
i. Replace resilient disc ring as above.
j. Lubricate hinge pin and start hinge pin and key into the hinge.
k. Replace the side plug (normally on left-hand side as seen facing valve inlet).
l. Drive hinge pin in with a soft tool (make certain that key and key seats remain lined up).
m. Replace set screws in hinge (if any).
n. Repack or replace rings in the side plug stuffing box.
o. Start packing gland into side plug stuffing box.
p. Replace lever, lever key, and setscrew on extended hinge pin.
q. Tighten side plug stuffing box. Tighten slowly and move lever frequently so as to not over tighten and cause valve to hang open.
r. Replace cover
s. Replace spring or weight.
t. Pressurize and bleed.

2. Seat Rings/Disc Rings

a. When to polish

Leakage is considered excessive.

b. Replacement parts

See Pages 7 & 8.

c. Supplies

Crocus cloth or very fine (600 grit maximum) wet/dry sand paper or valve lapping compound.

d. Procedure

1. See Page 5 – Steps d.1 through d.6.
2. Inspect seat ring and disc ring (on metal to metal valves). Polish away any scale and check for nicks and scratches.
3. For metal to metal valves – lay a piece of wet/dry paper on a very flat surface and polish the disc ring (with a wiping and rotating motion) until the entire brass disc ring is smooth, flat and free of scratches.
4. Wipe the entire surface of the seat ring. It must be smooth, flat and free from radial scratches.
5. For a better than usual seal, use some valve lapping compound on the seat ring. Rub the disc on the seat ring with a rotating and wiping motion. Clean the compound from the seat and disc and replace it several times.
6. See Page 5 & 6 – Steps d.13 through d.21.

V. RECOMMENDED SPARE PARTS FOR C.I. CHECK VALVES (Figure 106, 106A, 1106, 1106A, 126, 126A, 1126 and 1126A.

A. Necessary

1. Cap gasket (1100 series checks use o-rings)
1. Resilient disc (for rubber faced valves only)
2. Packing for lever & spring and lever & weight valves.

B. Useful

2. Hinge pin, hinge, and disc assembly
3. Bolts and nuts (1100 series valves do not require cover nuts)
4. Disc bolt o-ring(s) (106A, 1106A, 126, 1126, 126A and1126A valves)
5. Disc bolt gasket (106/1106 valves)

Valve Size	Bolt Size	Torque (ft-lbs)
2”, 2 ½”, 3”, 4”, 6”	5/8 UNC	100
6” & 8”	¾ UNC	150
10” & 12”	7/8 UNC	230

Gaskets (Cap):

2” to 12” valves use a cap gasket identical to the end flange gasket (N/A for 1100 series check valves)

VI SIZING OF SWING CHECK VALVES

To assure reliable, stable, chatter-free operation, it is recommended that swing check valves be sized to assure the disc will open full during normal flow conditions. The head loss during normal flow conditions should exceed (1) one psi for valves 4" and smaller and exceed (1/2) one-half psi for the remaining larger sizes. The data below provides an estimate of what should be the minimum design flow rates:

SIZE	DESIGN MIN. FLOW G.P.M.	REF CV*
2"	150	141
2 ½"	250	235
3"	350	347
4"	650	643
6"	1100	1532
8"	2100	2836
10"	3300	4573
12"	4800	6756

*CV values are based partially on extrapolated data and in any case only apply to flows greater than the minimum flows specified.

WARRANTIES

KENNEDY VALVE COMPANY

Limited Warranty

Kennedy Valve warrants that the goods furnished hereunder, will be free from defects in material and workmanship, and will operate freely without failure or leakage under the service conditions they were installed under.

If within one year from date of initial operation, but not more than eighteen months from date of shipment by Kennedy Valve of any item of product(s), the purchaser discovers that such item(s) was not as warranted above, notifies Kennedy Valve in writing within 30 days from date purchaser discovered; or should have discovered, then Kennedy Valve shall remedy such nonconformance by, at Kennedy Valve's option, adjustment or repair or replacement of the item and any affected part of the product(s) within 30 days of such notice. Purchaser shall assume all responsibility and expense for removal, reinstallation and freight in connection with the foregoing remedies.

Kennedy Valve shall not be liable for incidental or consequential losses, damages, or expenses, directly or indirectly arising from the sale, handling or use of the goods, or from any other cause relating thereto, and Kennedy Valve's liability hereunder in any case is expressly limited to replacement (in the form originally shipped) of goods not complying with this agreement, or, at Kennedy Valve's election, to the replacement of, or crediting Purchaser with, an amount equal to the purchase price of such goods whether such claims are for breach of warranty or negligence.

Kennedy Valve reserves the right to change material composition without prior notice as long as it meets applicable standards.

Ten Year Limited Warranty on Kennedy K81A&D Guardian Fire Hydrant

Kennedy Valve Company warrants that its Kennedy Guardian Fire Hydrant will be free from defects in material and workmanship under normal and customary use and maintenance for a period of ten (10) years from the date of purchase, provided the hydrant is installed and maintained according to Kennedy Valve instructions, and applicable codes. The foregoing warranty does not cover failure of any part or parts from external forces, including but not limited to earthquake, vandalism, vehicular or other impact, application of excessive torque to the operating mechanism or frost heave.

Should any Kennedy Valve Company part or parts fail to conform to the foregoing warranty, Kennedy Valve shall, upon prompt written notice thereof, repair or replace, F.O.B. point of manufacture, such defective part or parts. Purchaser shall, if requested, return the part or parts to Kennedy Valve, transportation prepaid. Purchaser shall bear all responsibility and expense incurred for removal, reinstallation and shipping in connection with any part supplied under the foregoing warranty.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS. IN NO EVENT SHALL KENNEDY VALVE COMPANY BE RESPONSIBLE OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL LOSSES, DAMAGES OR EXPENSES.

Ten Year Limited Warranty on Kennedy Valve Resilient Wedge Valve

Kennedy Valve Company warrants that its Resilient Wedge valves will be free from defects in material and workmanship under normal and customary use and maintenance for a period of ten (10) years from the date of purchase, provided the valve is installed and maintained according to Kennedy Valve instruction, and applicable codes. The foregoing warranty does not cover failure of any part or parts from external forces, including but not limited to earthquake, vandalism, vehicular or other impact, application of excessive torque to the operating mechanism or frost heave.

Should any Kennedy Valve Company part or parts fail to conform to the foregoing warranty, Kennedy Valve shall, upon prompt written notice thereof, repair or replace, F.O.B. point of manufacture, such defective part or parts. Purchaser shall, if requested, return the part or parts to Kennedy Valve, transportation prepaid. Purchaser shall bear all responsibility and expense incurred for removal, reinstallation and shipping in connection with any part supplied under the foregoing warranty.

THE FOREGOING WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY OPERATION OF LAW OR OTHERWISE, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS. IN NO EVENT SHALL KENNEDY VALVE COMPANY BE RESPONSIBLE OR LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL LOSSES, DAMAGES OR EXPENSES.

950XLT2
DCVA

H.D. FOWLER
COMPANY

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

Model 950XLT2 LEAD-FREE*

Double Check Valve Assembly (3/4”, 1”, 1 1/4”, 1 1/2” & 2”)
*This product contains a weighted average lead content less than 0.25% for wetted surfaces.
*Certified to NSF/ANSI 61-G

❑ Installation ❑ Testing ❑ Maintenance Instructions

INSTALLATION INSTRUCTIONS

CAUTION: Installation of Backflow Preventers must be performed by qualified, licensed personnel. The installer should be sure the proper device has been selected for the particular installation. Faulty installation could result in an improperly functioning device.

ZURN WILKINS Model 950XLT2 Double Check Valve assemblies are for use on potable water lines where a health hazard does not exist in the event of a backflow situation.

Damage to the device could result wherever water hammer and/or water thermal expansion could create excessive line pressure. Where this could occur, shock arresters, check valves and/or pressure relief valves should be installed downstream of the device.

If installation is in a pit or vault, the Backflow Preventer must never be submerged in water because this could cause a cross-connection. Make sure that the pit or vault always remains dry by providing ample drainage.

1. Before installing a Model 950XLT2 Backflow Preventer, flush the line thoroughly to remove all debris, chips and other foreign matter. If required, a lead-free strainer should be placed upstream of the Backflow Preventer. CAUTION: Do not use a lead-free strainer in seldom used emergency waterlines such as fire lines.

2. Provide adequate space around the installed unit so that the test cocks will be accessible for testing and servicing.

3. Install valve at least 12 inches above surrounding flood level.

4. Always consult local codes for installation methods, approvals and guidance.

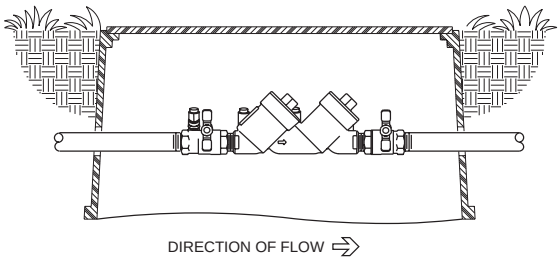
PLACING THE MODEL 950XLT2 IN SERVICE

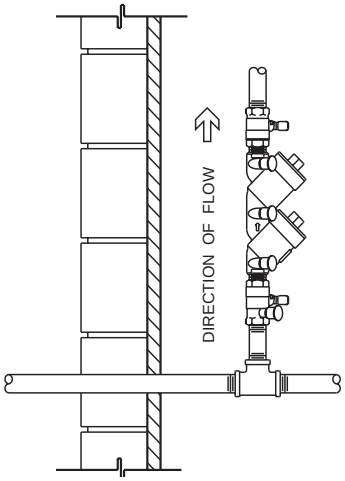
1. Start with both shut-off valves closed. Slowly open the inlet shut-off valve until the backflow preventer is completely pressurized.

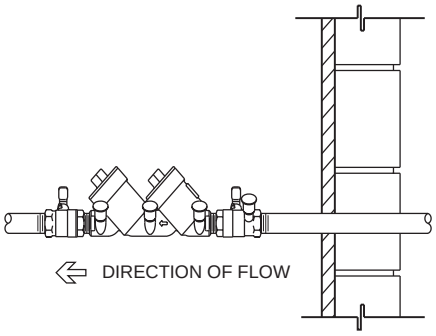
2. When the unit has been pressurized, vent any trapped air by slightly opening each of the four test cocks.

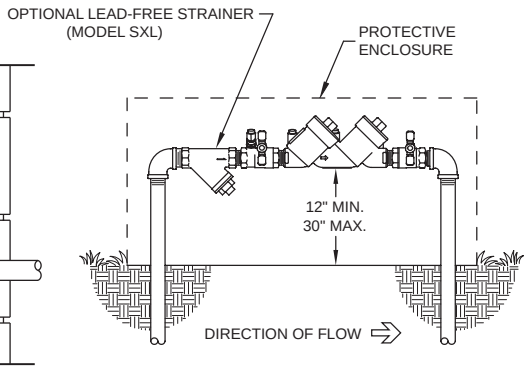
3. Slowly open the downstream shut-off valve. The Model 950XLT2 Double Check Valve assembly is now in service.

4. After the Model 950XLT2 has been properly installed, test the device (see “TEST PROCEDURES”). If the device fails the test, remove the first and second check valves and thoroughly flush the device. Clean rubber and seats of all debris and place unit back in service.









VERTICAL INSTALLATION

Vertical installation is acceptable in applications where inlet and outlet piping are flowing vertically upwards. All the basic installation instructions apply to such installations. Consult factory for approval status.

INDOOR INSTALLATION

Indoor installation is preferred in areas that are subject to freezing conditions. All the basic installation instructions apply to such installations.

OUTDOOR INSTALLATION

The Model 950XLT2 Backflow Preventer may be installed outdoors only if the device is protected against freezing conditions. Exposure to freezing conditions will result in improper function or damage to the device. The installation location must be kept above 32°F. All the basic installation instructions apply.

Testing Procedures

MODEL 950XLT2 DOUBLE CHECK VALVE ASSEMBLY

Equipment Required: Differential pressure gauge test kit.

TEST NO. 1 - TIGHTNESS OF #1 CHECK VALVE

REQUIREMENT:

The static pressure drop across check valve #1 shall be at least 1.0 psid. If test cock #3 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #3 so that it rises to the top of the check valve body.

PROCEDURE:

1. Slowly open all 4 test cocks to remove any foreign material and attach fittings.
2. Attach hose from the high side of the test kit to the #2 test cock.
3. Open test cock #2 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #3, open test cock #3 to fill the tube. Close test cock #3. Close #2 shut-off valve then close the #1 shut-off valve.
4. Hold gauge at same level as test cock #3 or water level in tube. Slowly open test cock #3. Record the static pressure drop across check valve #1 after gauge reading stabilizes and water stops running out of test cock #3.
5. Close all test cocks, open shut-off valve #1 and remove test equipment.

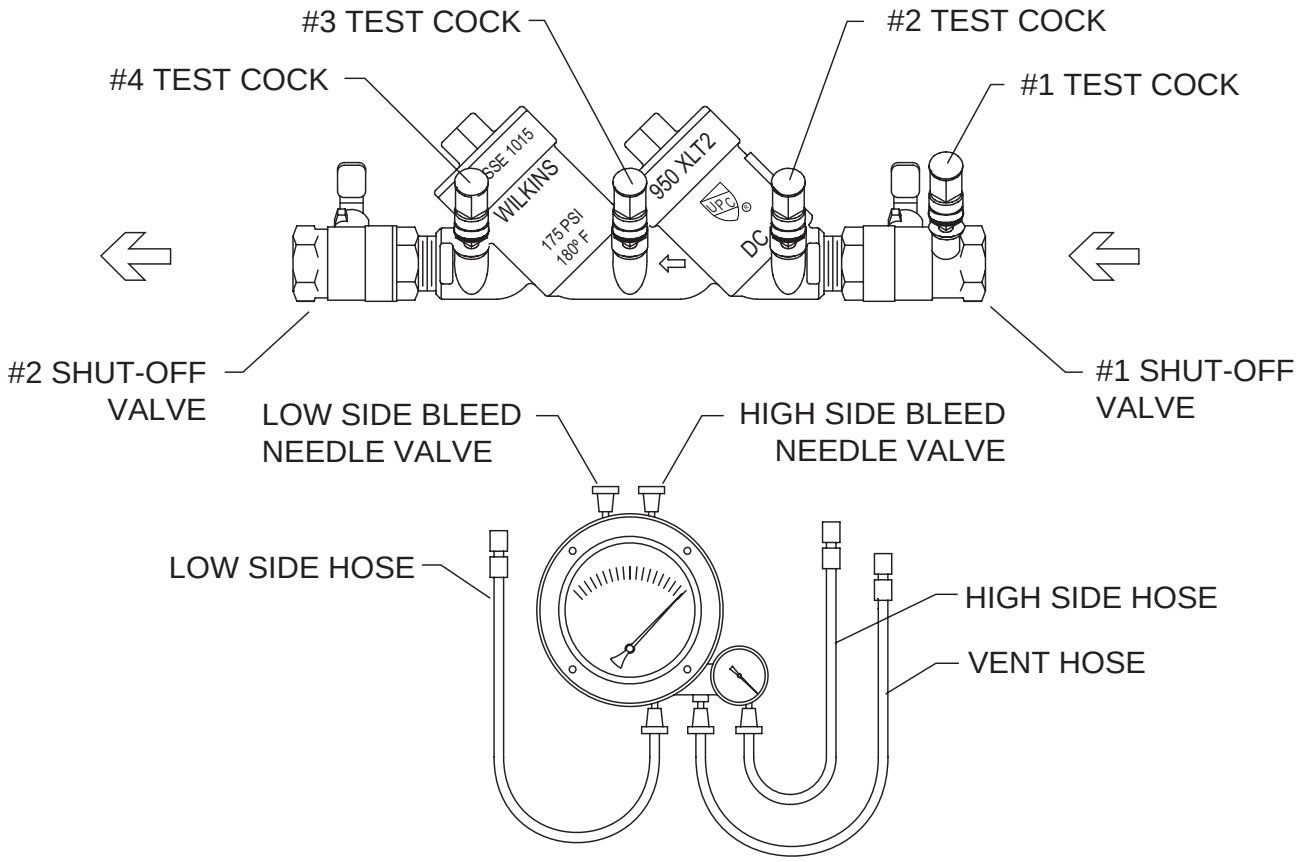
TEST NO. 2 - TIGHTNESS OF #2 CHECK VALVE

REQUIREMENT:

The static pressure drop across check valve #2 shall be at least 1.0 psid. If test cock #4 is not at the highest point of the check valve body, then a vertical tube must be installed on test cock #4 so that it rises to the top of the check valve body.

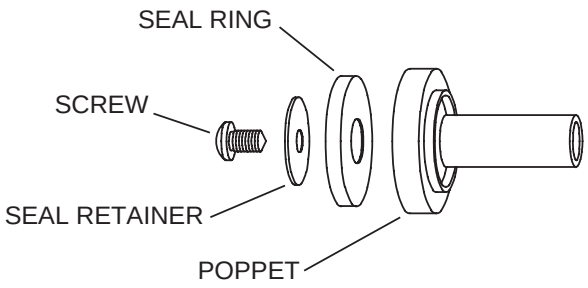
PROCEDURE:

1. Attach hose from the high side of the test kit to the #3 test cock.
2. Open test cock #3 and bleed all air from the hose and gauge by opening the high side bleed needle valve. Close high side bleed needle valve. If a tube is attached to test cock #4, open test cock #4 to fill the tube. Close test cock #4. Close #1 shut-off valve.
3. Hold gauge at same level as test cock #4 or water level in tube. Slowly open test cock #4. Record the static pressure drop across check valve #2 after gauge reading stabilizes and water stops running out of test cock #4.
4. Close all test cocks, slowly open shut-off valve #1 & #2 and remove test equipment.



ZURN WILKINS
1747 Commerce Way, Paso Robles, CA 93446 Phone:855-663-9876 Fax:805-238-5766
www.zurn.com

Maintenance Instructions



CHECK ASSEMBLY

All Model 950XLT2 Double Check Valve Backflow Preventers must be inspected and maintained by licensed personnel at least once a year or more frequently as specified by local codes. Replacement of worn or damaged parts must only be made with genuine "ZURN WILKINS" parts.

GENERAL MAINTENANCE

1. Clean all parts thoroughly with water after disassembly.
2. Carefully inspect rubber seal rings and o-rings for damage.
3. Test unit after reassembly for proper operation (refer to "TESTING PROCEDURES").

SERVICING CHECK VALVES

1. Close inlet and outlet shut-off valves.
2. Open No. 2, No. 3 and No. 4 test cocks to release pressure from valve.
3. Unscrew check valve cover using appropriate sized wrench. CAUTION: COVER IS SPRING LOADED. To avoid injury, hold cover down firmly with one hand while unscrewing.
4. Remove cover, spring and poppet assembly.
5. Inspect the rubber seal ring for cuts or embedded debris.
6. To remove seal ring, remove screw and seal retainer.
7. If the reverse side of the seal ring is unused, it is possible to invert the seal ring. This would be considered a temporary solution to fixing a fouled check and should be replaced with a new seal ring as soon as possible.
8. Inspect the valve cavity and seating area. Remove any debris.
9. If necessary, unscrew seat from body and replace with new seat and lightly greased o-ring (For seat removal assistance, contact factory).
10. Reverse the above procedures to reinstall check valve assemblies and access cover, making sure the 3 test cocks remain open.

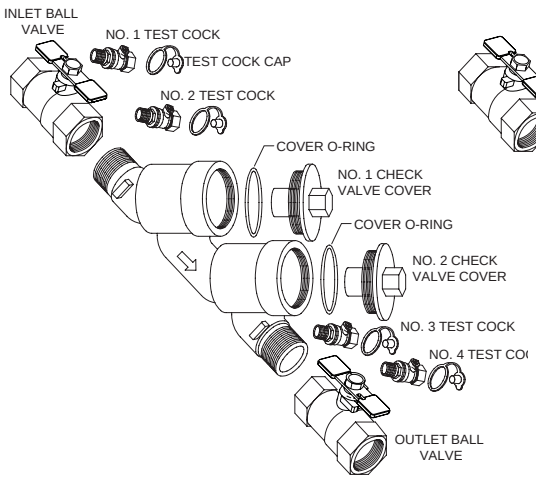


FIGURE 1

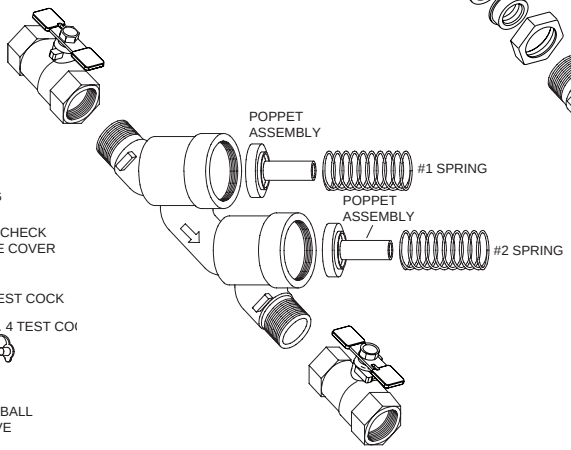


FIGURE 2

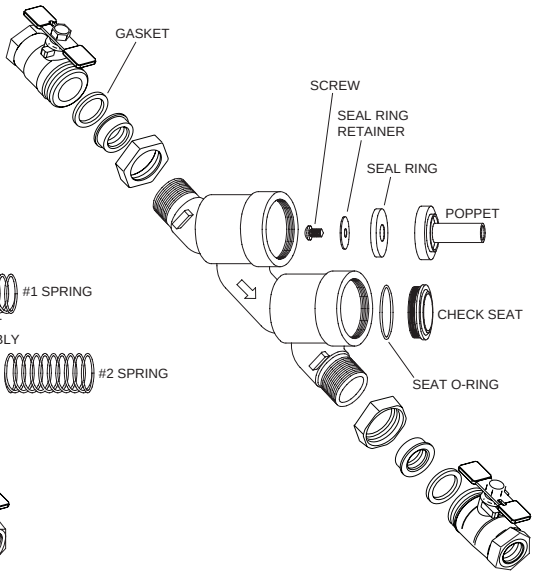


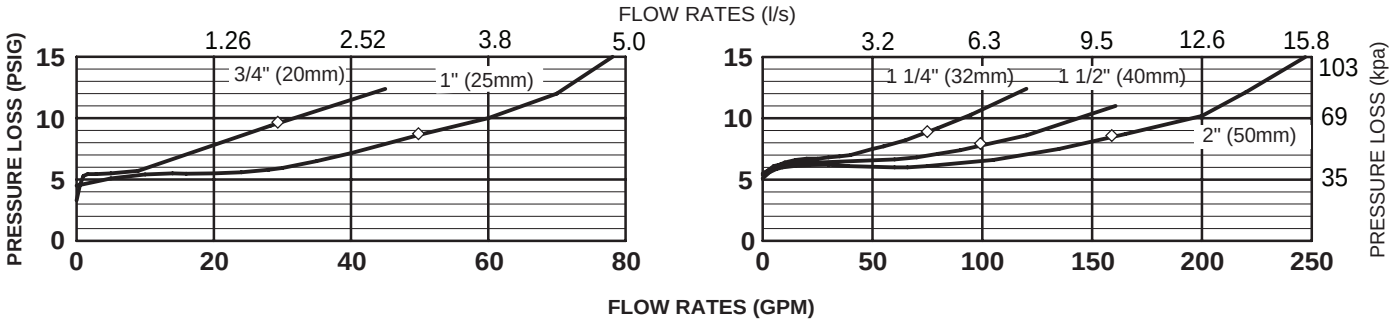
FIGURE 3
(Shown with optional union ball valves)

Troubleshooting

PROBLEM	POSSIBLE CAUSES	CORRECTIVE ACTION
1. LEAKING CHECK VALVES	1. Debris on seat or seal ring 2. Damaged seat 3. Damaged seat o-ring	1. Clean seat and seal ring area 2. Replace seat 3. Replace seat o-ring
2. LOW OR NO FLOW	1. Device installed backwards 2. Shut-off valves or valve upstream may not be fully open 3. Low supply pressure	1. Verify flow direction arrow 2. Turn handles counterclockwise 3. Attach pressure gauge to test cock #1 and verify pressure

Performance Characteristics

MODEL 950XLT2 3/4", 1", 1 1/4", 1 1/2" & 2" (STANDARD & METRIC)



◇ Rated Flow (Established by approval agencies)

Capacity thru Schedule 40 Pipe				
Pipe size	5 ft/sec	7.5 ft/sec	10 ft/sec	15 ft/sec
1/8"	1	1	2	3
1/4"	2	2	3	5
3/8"	3	4	6	9
1/2	5	7	9	14
3/4"	8	12	17	25
1"	13	20	27	40
1 1/4"	23	35	47	70
1 1/2"	32	48	63	95
2"	52	78	105	167

SPECIFICATIONS

Maximum working water pressure: 175 PSI
Maximum working water temperature: 180°F
Hydrostatic test pressure: 350 PSI
End connections: Threaded ANSI B1.20.1

Proper performance is dependent upon licensed, qualified personnel performing regular, periodic testing according to ZURN WILKINS' specifications and prevailing governmental & industry standards and codes and upon following these installation instructions. Failure to do so releases ZURN WILKINS of any liability that it might otherwise have with respect to that device. Such failure could also result in an improperly functioning device.

Proposition 65 Warning This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

MODEL 950XLT2

WILKINS® a ZURN® company

Lead-Free* Double Check Backflow Preventers 3/4” to 2”

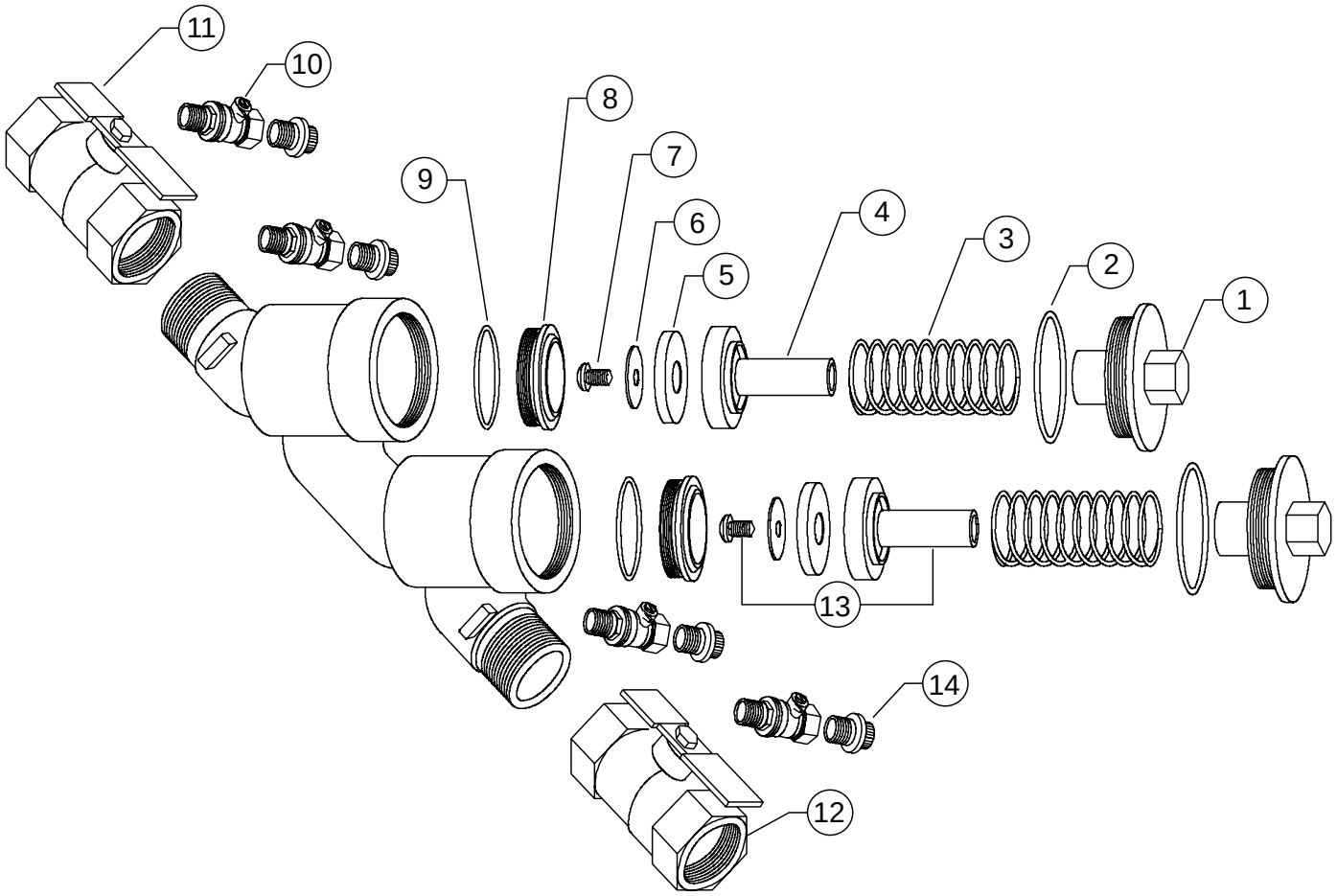
*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

ITEM NO.	DESCRIPTION	3/4”	1”	1 1/4”	1 1/2”	2”
1	CHECK COVER	952-3XL2-010F	952-3XL2-010F	954-3XL2-010F	954-3XL2-010F	954-3XL2-010F
2	O-RING, COVER	136N	136N	153N	153N	153N
3	CHECK SPRING	952-33	952-33	554-33	554-33	554-33
4	POPPET	952-30-010F	952-30-010F	954-30-010F	954-30-010F	954-30-010F
5	SEAL RING	952-12S	952-12S	954-12S	954-12S	954-12S
6	SEAL RING RETAINER	952-14	952-14	954-14	954-14	954-14
7	RETAINING BOLT	952-11	952-11	952-11	952-11	952-11
8	CHECK SEAT	952-18T	952-18T	954-18T	954-18T	954-18T
9	O-RING, CHECK SEAT	WK-125N	WK-125N	136N	136N	136N
10	TEST COCK	18-860XL	18-860XL	14-860XL	14-860XL	14-860XL
11	BALL VALVE, TAPPED	34-850TXL	1-850TXL	114-850TXL	112-850TXL	2-850TXL
12	BALL VALVE	34-850XL	1-850XL	114-850XL	112-850XL	2-850XL
13	POPPET ASSEMBLY	952-300S	952-300S	954-300S	954-300S	954-300S
14	TEST COCK CAP PLUG	2-7P	2-7P	2-7P	2-7P	2-7P
	CHECK SEAT TOOL	972-SEATTOOL		974-SEATTOOL		

REPAIR KITS

RK34-950XL		**REPAIR KIT COMPLETE** MODEL 950XLT2, 3/4” & 1” Only	**RK114-950XL**		**REPAIR KIT COMPLETE** MODEL 950XLT2, 1 1/4”, 1 1/2”, 2” Only
PART NO.	QTY.	DESCRIPTION	PART NO.	QTY.	DESCRIPTION
952-12S	2	SEAL RING	954-12S	2	SEAL RING
136N	2	O-RING, COVER	153N	2	O-RING, COVER
952-33	2	CHECK SPRING	554-33	2	CHECK SPRING

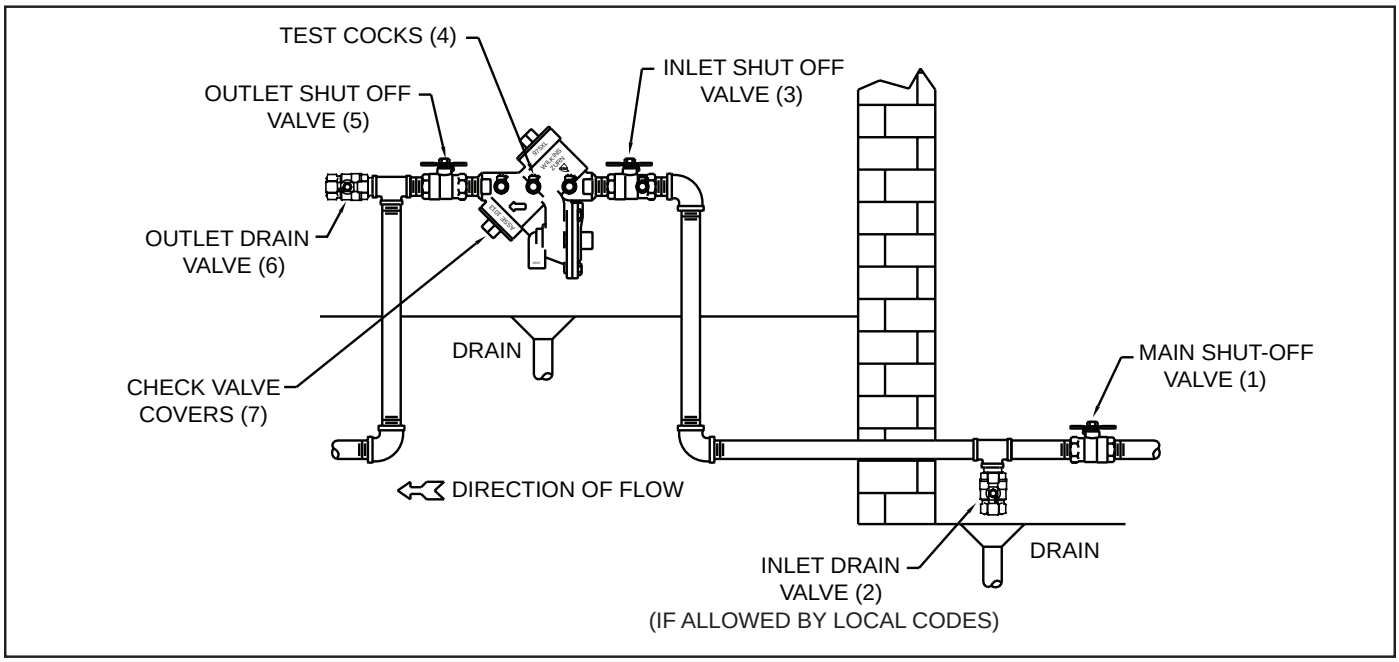
RK34-950XLR		**RUBBER REPAIR KIT** MODEL 950XLT2, 3/4” & 1” Only	**RK114-950XLR**		**RUBBER REPAIR KIT** MODEL 950XLT2, 1 1/4”, 1 1/2”, 2” Only
PART NO.	QTY.	DESCRIPTION	PART NO.	QTY.	DESCRIPTION
952-12S	2	SEAL RING	954-12S	2	SEAL RING
136N	2	O-RING, COVER	153N	2	O-RING, COVER


11
10
8
7
9
6
4
3
5
2
1
13
14
12

Model 950, 950XL, 975 & 975XL

Double Check Valve Backflow Preventer
Reduced Pressure Principle Backflow Preventer

Draining Procedure for Freeze Protection



To drain backflow preventer for freeze protection, use the following procedure:

1. Turn off main shut-off valve (1) that supplies water to the system.

2. Open both inlet and outlet drain valves in the system (2 & 6). Open inlet and outlet shut-off valves on the backflow preventer (3 & 5) and all of the test cocks (4). Leave all valves and test cocks in the half open/half closed (45°) position to allow full drainage of the ball valves and test cocks.

3. If you wish to "blow out" the system downstream of the backflow preventer, make sure the outlet drain valve (6) is open and the backflow preventer shut-off valve (5) is closed.

4. Connect an air hose to the outlet drain valve (6) and inject an adequate volume of air to remove all water from the downstream portion of the system.

5. CAUTION: Open outlet shut-off valve to the backflow preventer (5) and outlet drain valve (6) to the half open/half closed (45°) position after "blow out" process is completed.

6. Leave all drain valves (2 & 6), shut-off valves (3 & 5) and test cocks (4) in the half open/half closed position (45°) for the duration of the winter to prevent freezing.

7. You may loosen the check valve covers (7) to allow complete drainage of the backflow body.

   CAUTION: Be certain that main shut-off valve (1) remains tightly closed to prevent refilling of the system. Also, the main shut-off valve must be resilient seated to insure no leakage of water into the system.

Proposition 65 Warning This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

In accordance with U.S. Federal Safe Drinking Water Act Lead-Free requirements, as of January 4, 2014, this product can only be used in water systems considered non-potable. Please contact your local water utility for further requirements.

ZURN WILKINS
1747 Commerce Way, Paso Robles, CA 93446 Phone:855-663-9876 Fax:805-238-5766
www.zurn.com

Wilkins® Terms and Conditions

Price and Terms of Payment

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% per month service charge will be added to all past due invoices. Annual rate 18% of the outstanding balance due.

Minimum invoice $50.00. Zurn reserves the right to apply a minimum order charge to equal $50.00. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part if in its sole opinion, the Buyer's ability to pay for the merchandise or the terms and conditions herein are in doubt. The Credit Department of Zurn must be notified of potential pricing errors within 30 days of invoice date.

Freight

All sales are F.O.B. Zurn's plant. Zurn will allow full freight allowance only on Zurn Wilkins® orders of $5,000 or more. This full freight allowance is when the shipment is within the continental United States and has a destiny of a Buyer's standard address of job location. Routing of shipment shall be determined at the sole discretion of Zurn. Multi product line orders totaling $7,500 can be combined to meet FFA guidelines. Shipping dates are estimates and time of delivery is not the essence of this sale of the contract therefore. Under no circumstances will Zurn have any responsibility on account of any delays in manufacture, transportation, or otherwise.

Limited Warranty

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of one year from the date of purchase. Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned to Zurn prepaid at Paso Robles, California, with evidence that they have been properly maintained and used in accordance with instructions. ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO A PERIOD OF ONE YEAR AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS. A damaged/broken test cock or ball valve is not considered defective. Please reference the Wilkins Rep Guide for assistance. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

Illustrations of Typical Installations

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

Returned Goods

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of a return must total at least $50.00 to qualify for credit allowance. A damaged/broken test cock or ball valve is not considered defective. Please reference the Wilkins Rep Guide for assistance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-to-order items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within two years of invoice date for credit to be issued.

Shortage/Damage Claims

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgement of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgement of such damaged material with formal claim covering said damage.

General

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by the general office of Zurn in Paso Robles, California.

Catalog printed in U.S.A.

600XL
PRV VALVE

H.D. FOWLER COMPANY

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

Model 600XL LEAD-FREE*

Pressure Reducing Valve with Integral By-pass

(1/2", 3/4", 1", 1 1/4", 1 1/2" & 2")

*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

❑ Installation ❑ Testing ❑ Maintenance Instructions

REPAIR KIT INSTRUCTIONS

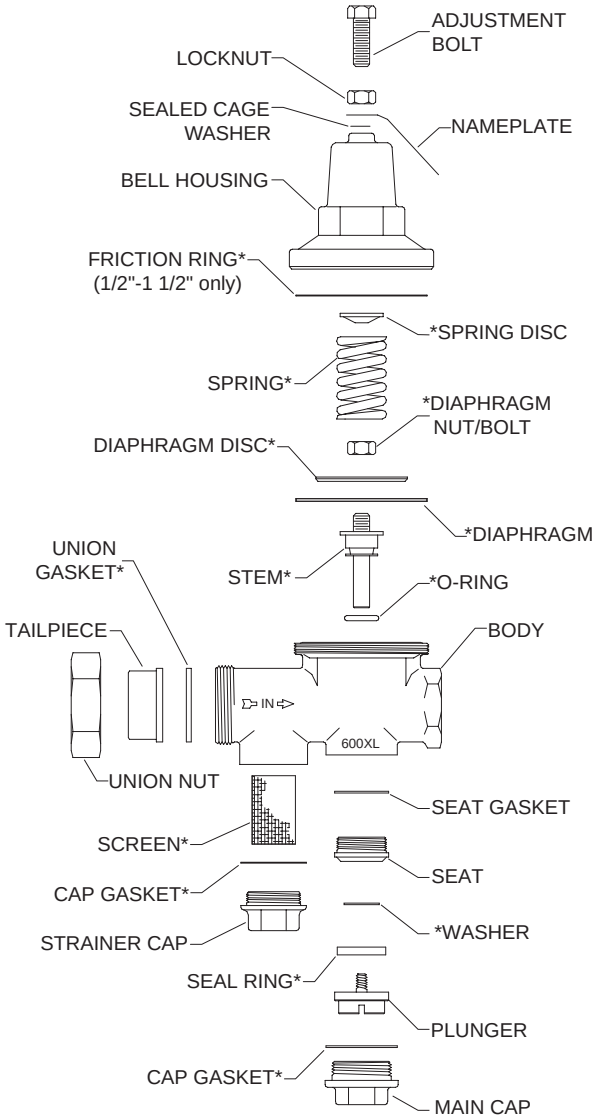
HOW TO MAKE REPAIRS:

(Shut off service before starting disassembly)

1. Open faucet on dwelling to remove line pressure.
2. Note distance that adjustment bolt protrudes from bell housing. Loosen locknut on adjustment bolt, then turn adjustment bolt out of bell housing until free of spring tension.
3. Loosen main cap and remove counterclockwise.
4. Loosen plunger and remove counterclockwise. Remove old seal ring then insert new seal ring.
5. Loosen strainer cap counterclockwise and remove screen.
6. Unscrew bell housing counterclockwise and remove spring, spring disc and friction ring.
7. Remove stem assembly from regulator. Inspect area in body where stem o-ring guides for pitting or scratches. Smooth bore with emery cloth if needed. This area must be smooth for the valve to function correctly.

TO REASSEMBLE:

1. Open shut-off valve slowly and flush body and line of any debris.
2. Assemble new stem unit using new stem, o-ring, diaphragm, diaphragm disc and diaphragm bolt/nut. Tighten bolt/nut securely (CAUTION: Be sure the rounded edge of the diaphragm disc is next to the diaphragm).
3. Lubricate o-ring with grease supplied in repair kit and install stem unit in body.
4. Center washer on stem. Screw plunger into stem unit. CAUTION: Do not over tighten plunger; it is possible to break the threaded end of the plunger.
5. Install new spring, spring disc and friction ring then replace bell housing by tightening clockwise. Turn adjustment bolt clockwise until adjustment bolt touches spring disc.
6. Install new screen, cap gaskets and replace caps by tightening clockwise.
7. Turn adjustment bolt into bell housing to old setting then enter dwelling and turn on several faucets.
8. Turn on water service. Let water run for several seconds then turn off faucets in dwelling.
9. Adjust the regulator to desired pressure by turning adjustment bolt clockwise (into bell housing) to raise pressure or counterclockwise (out of bell housing) to lower pressure. **It is recommended a pressure gauge be installed downstream of the regulator to ensure pressure is reduced below 75 psi.** NOTE: When reducing pressure, open a downstream faucet to relieve pressure.
10. Tighten locknut when desired pressure is achieved.



* INDICATES PARTS SUPPLIED IN REPAIR KITS
(spring disc not included in sizes 1 1/2"-2")

INSTALLATION INSTRUCTIONS

Install valve in line with arrow on valve body pointing in direction of flow. Before installing reducing valve, flush out line to remove loose dirt and scale which might damage seal ring and seat. All valves will be furnished with stock settings to reduce to 50 psi. To readjust reduced pressure, loosen outer locknut and turn adjustment bolt clockwise (into bell housing) to raise reduced pressure, or counterclockwise (out of bell housing) to lower reduced pressure.

NOTICE: Annual inspection and maintenance is required of all plumbing system components. To ensure proper performance and maximum life, this product must be subject to regular inspection, testing and cleaning.

Regulators in series: Where the desired pressure reduction is more than a 4 to 1 ratio (i.e. 200psi to 50psi), multiple regulators in series should be installed.

SEALED CAGE WARNING: Loosen lock washer at adjustment bolt slowly. Look for any trapped water pressure under the sealed cage washer. Relieve pressure before removing bell.

CAUTION: Anytime a reducing valve is adjusted, a pressure gauge must be used downstream to verify correct pressure setting. Do not bottom out adjustment bolt on bell housing. Valve may be installed in any position.

WARRANTY: ZURN WILKINS Valves are guaranteed against defects of material or workmanship when used for the services recommended. If in any recommended service, a defect develops due to material or workmanship, and the device is returned, freight prepaid, to ZURN WILKINS within 12 months from date of purchase, it will be repaired or replaced free of charge. ZURN WILKINS' liability shall be limited to our agreement to repair or replace the valve only.

Proposition 65 Warning This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

Troubleshooting

Pipe lines in a water supply system must be of sufficient carrying capacity to maintain adequate pressure at the most remote or highest fixture. Under the maximum probable fixture use, minimum adequate pressure is generally 8 to 15 lbs. but may be more, depending on the equipment being supplied. Relatively high service pressures which can create high water velocities in pipe lines would allow use of smaller pipes to satisfy fixture use. However, high velocity tends to cause whistling and humming. Reduction of pressure by the use of a pressure reducing valve, in an attempt to eliminate such a condition, may reduce pipe line capacities below that which is adequate for maximum probable use. When high service pressures are in effect, either continuously or periodically, the application of a pressure reducing valve will be successful only when the installed pipe line is of adequate size to satisfy the system demand at the lower pressure. When actual water demands are unknown, the valve size should be no less then the existing pipe size.

PROBLEM

1. Pressure creeps or builds up in system above the setting of pressure reducing valve.

POSSIBLE CAUSE OR CAUSES

A. Thermal expansion of water as it is being heated.
B. Foreign matter on seating face of seal ring.
C. Cut, worn or chipped seal ring.
D. Cut or worn stem o-ring or worn o-ring groove.

SOLUTION
a. This is a natural consequence. It may happen each time that the heater runs. A pressure relief valve or expansion tank must be installed. This will not prevent pressure rise but should limit it to a safe level.
b. Flush the reducing valve by opening one or two fixture outlets wide. If this does not correct the problem, remove seal ring for cleaning.
c. Replace with new seal ring. Temporary repairs may be made by turning the seal ring over.
d. Replace with new stem o-ring and/or cartridge.

2. Pressure and fixture flow is unsteady.

A. Low water supply pressure in mains caused possibly by high area demand during certain periods of the day.
B. Heavy periodic demands by appliances in the house.

SOLUTION
a. This is a water department problem. It is due to the mains being inadequate for the demands made on them.
b. House service lines may at times be inadequate for the load. Size of some pipelines may need to be increased. Pressure setting of reducing valve may be too low.
c. Try increasing pressure before changing pipelines.

3. Small, inadequate flow from fixtures.

A. Pipelines to fixtures may be too small or house main supply may be inadequate for normal fixture demand.
B. Heavy periodic demands by appliances in the house.
C. Screen clogged with debris.

SOLUTION
a. It may be necessary to increase pipe sizes only in some sections of the system leading to the offending appliances or fixtures. Increasing the house service mains might be necessary if small supply is general at all fixtures.
b. Raise pressure gradually by readjusting valve until this point is determined.
c. Clean screen.

4. Valve appears to be noisy; hums, whistles or chatters.

A. Hum or whistle is usually caused by a high velocity of flow in pipelines causing vibration.
B. Chatter usually originates with worn seat washer or loosely installed seal ring.

SOLUTION
a. Pipelines could be small or too light. Reducing valves could be too small. Pipes and valves being small would accentuate this condition.
b. Inspect seal ring. If a deep channel appears on seal ring face, replace or use the opposite side.
c. Frequently noise appears in a faucet or appliance and seems to originate from the reducing valve. There is a general tendency to use streamline piping of a relatively small size. Velocity is naturally high and noise of fast moving water is not unusual.

MODEL 600XL

1/2", 3/4", 1" LEAD-FREE*

ZURN® WILKINS

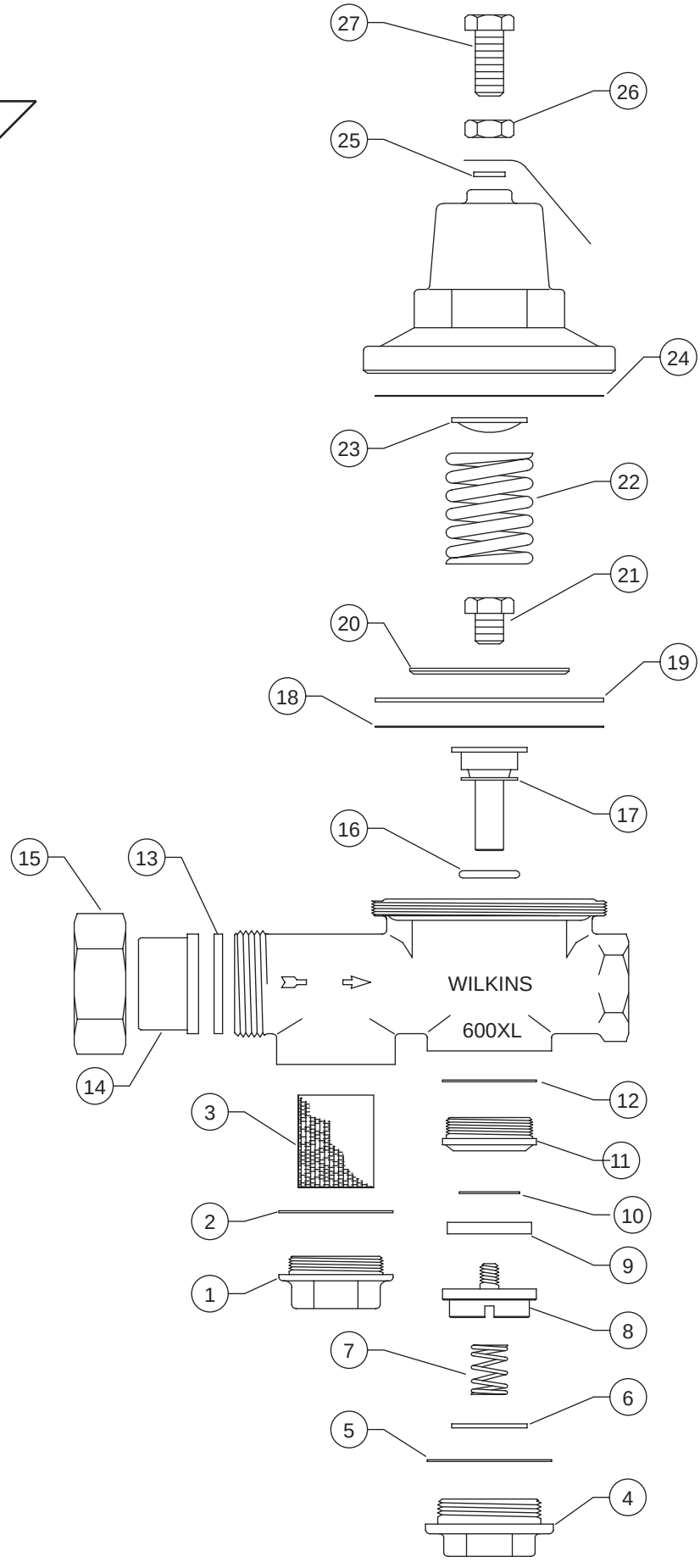
*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

ITEM NO.	DESCRIPTION	1/2”	3/4”	1"
1	STRAINER CAP	601-3XL	602-3XL	501-3XL-010F
2	CAP WASHER	601A-12	503A-13	501A-12
3	SCREEN	601-41	602-41B	603-41
4	MAIN CAP	601-3XL	602-3XL	603-3AXL-010F
	MAIN CAP	601-3XLLP	602-3XL	603-3AXL-010F
5	CAP WASHER	601A-12	503A-13	603A-12A
6	WASHER	—	—	204-14A
7	SPRING	602-33LPVS	602-33LPVS	602-33LPVS
8	PLUNGER	601-34XL	602-34XL	603-34XL
	PLUNGER	601-34XLLP	602-34XLLP	603-34XLLP
	PLUNGER	611-34XL, 604C-12, 602B-11	612-34XL, 604C-12, 602B-11	613-34XL, 604C-12, 602B-11
9	SEAT WASHER	601-12A	502-12	603-12A
10	WASHER	601-14	502-14	62-14
11	SEAT	601-18	602-18	603-18
12	SEAT GASKET	501A-13	502A-13	603A-13
13	UNION GASKET	601-13	62-13	63-13
14	TAILPIECE NPT (FEMALE)	601-19XL	602-19XL	63-19
	TAILPIECE NPT (MALE)	—	602M-19XL	63M-19XL
	TAILPIECE COPPER (FEMALE)	601C-19	602C-19	63C-19
	TAILPIECE COPPER (MALE)	—	602CM-19XL	63CM-19XL
15	UNION NUT	601-9-010F	62-9-010F	63-9-010F
16	O-RING	011N	WK-111N	113N
	O-RING	011N	113N	113N
17	STEM	601-5XL	602-5XL	603-5XL
	STEM	601-5XL	602-5XLLP	603-5XL
18	TEFLON DIAPHRAGM	62-43HT	62-43HT	503-43HT
19	DIAPHRAGM	501-43	501-43	503-43
	DIAPHRAGM	511-43	511-43	513-43
20	DIAPHRAGM DISC	602-80	602-80	603-80
21	BOLT / NUT	501B-9	501B-9	503-11
	BOLT / NUT	501B-9	503-11	503-11
22	SPRING	62-33	62-33	603-33
	SPRING	601-33HR	601-33HR	503-33HR
23	SPRING DISC	602A-80	602A-80	602A-80
24	FRICTION RING	602B-12	602B-12	603B-12
25	WASHER	606C-12	606C-12	606C-12
26	LOCKNUT	501B-9	501B-9	501B-9
	LOCKNUT SS	501B-9SS	501B-9SS	501B-9SS
27	ADJUSTMENT BOLT	602A-11A	602A-11A	602A-11A
	ADJUSTMENT BOLT	602A-11A	602A-11A	603A-11AHR
	ADJUSTMENT BOLT SS	602A-11ASS	602A-11ASS	602A-11ASS

★ REPAIR KIT ITEMS (ALL ★ ITEMS IN KIT)

● Item included in specified Model

600XL	600XLLPC	600XLLPV	600XLHT	600XLHR	600XLSC	610XL	600XLHLR	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●			●	●	●	●		
	●	●					●	
●	●	●	●	●	●	●	●	★
	●	●					●	
	●	●					●	
●			●	●	●			
	●	●					●	
						●		
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●			●	●	●	●		★
	●	●					●	★
●			●	●	●	●		★
	●	●					●	★
		●	●					★
●	●			●	●		●	★
						●		★
●	●	●	●	●	●	●	●	★
●			●	●	●	●		★
	●	●					●	★
●	●	●	●		●			★
				●		●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
					●			
●	●	●	●	●		●	●	★
					●			
●	●	●	●					
				●		●	●	
					●			



MODEL 600XL

1-1/4", 1-1/2", 2" LEAD-FREE*

ZURN® WILKINS

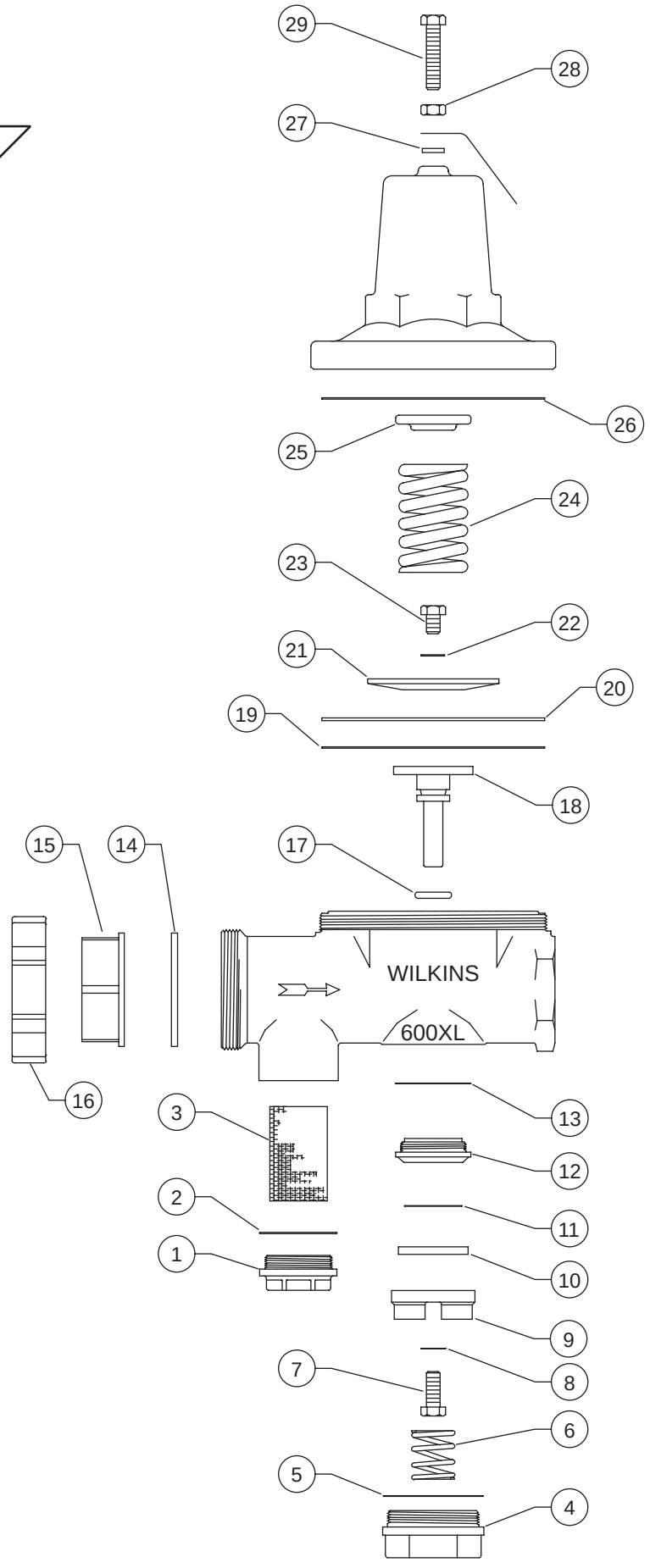
*This product contains a weighted average lead content less than 0.25% for wetted surfaces.

ITEM NO.	DESCRIPTION	1-1/4”	1-1/2”	2"
1	STRAINER CAP	603-3AXL-010F	605A-3AXL-010F	606A-3XL-010F
2	GASKET	603A-12A	603A-12A	604A-12
3	SCREEN	603-41	505-41	606-41
4	MAIN CAP	604-3XL-010F	604-3XL-010F	606-3XL-010F
5	GASKET	604A-12	604A-12	606A-12
6	SPRING	604-33LPVS	605-33LPVS	606-33LPVS
7	BOLT	604B-11	606B-11	606B-11
8	WASHER	604C-12	606C-12	606C-12
9	PLUNGER	604-34XL	605-34XL-010F	606-34XL-010F
10	SEAT WASHER	604-12	605-12	506-12
11	WASHER	504-14	505-14	606-14
12	SEAT	604-18	605-18	606-18
13	SEAT GASKET	504A-13	505A-13	506A-13
14	UNION GASKET	604-13	605-13	606-13
15	TAILPIECE NPT (FEMALE)	604-19XL-010F	605-19XL-010F	606-19XL-010F
	TAILPIECE COPPER (FEMALE)	604C-19	605C-19	606C-19
16	UNION NUT	604-9-010F	605-9-010F	606-9-010F
17	O-RING	110N	115N	115N
18	STEM	604-5XL	606-5XL-010F	606-5XL-010F
19	TEFLON DIAPHRAGM	504-43HT	505-43HT	606-43HT
20	DIAPHRAGM	504-43	505-43	606-43
	DIAPHRAGM	514-43	515-43	606-43
21	DIAPHRAGM DISC	604-80	505-80BR	505-80BR
22	WASHER	—	605A-14	—
23	BOLT	503-11	505-11	505-11
24	SPRING	604-33	605-33B	606-33
	SPRING	1005-33	605-33HR	606-33HR
25	SPRING DISC	602A-80	505A-80	505A-80
	SPRING DISC	604A-80	505A-80	507A-80
26	FRICTION RING	604B-12	505B-12	—
27	WASHER	606C-12	508C-12	508C-12
28	LOCKNUT	501B-9	505B-9A	505B-9A
	LOCKNUT SS	501B-9SS	505B-9SS	505B-9ASS
29	ADJUSTMENT BOLT	62A-11	605A-11A	605A-11A
	ADJUSTMENT BOLT SS	62A-11SS	605A-11ASS	605A-11ASS

★ REPAIR KIT ITEMS (ALL ★ ITEMS IN KIT)

● Item included in specified Model

600XL	600XLLPC	600XLLPV	600XLHT	600XLHR	600XLSC	610XL	600XLHLR	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
	●	●					●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
		●	●					★
●	●	●	●	●	●		●	★
						●		★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●	●	●	●	●	★
●	●	●	●		●			★
				●		●	●	★
●	●	●	●		●			
				●		●	●	
●	●	●	●	●	●	●	●	★
					●			
●	●	●	●	●		●	●	
					●			
●	●	●	●	●		●	●	
					●			



Wilkins® Terms and Conditions

Price and Terms of Payment

Terms are net, payable 30 days from date of invoice. All pricing in U.S. currency. The Buyer shall pay all sales, consumers, or other applicable taxes. A 1-1/2% per month service charge will be added to all past due invoices. Annual rate 18% of the outstanding balance due.

Minimum invoice $50.00. Zurn reserves the right to apply a minimum order charge to equal $50.00. All orders are subject to credit approval by the Zurn Credit Department prior to the acceptance of an order. Orders may be refused, delivery may be withheld, or shipment stopped in transit without any liability on Zurn's part if in its sole opinion, the Buyer's ability to pay for the merchandise or the terms and conditions herein are in doubt. The Credit Department of Zurn must be notified of potential pricing errors within 30 days of invoice date.

Freight

All sales are F.O.B. Zurn's plant. Zurn will allow full freight allowance only on Zurn Wilkins® orders of $5,000 or more. This full freight allowance is when the shipment is within the continental United States and has a destiny of a Buyer's standard address of job location. Routing of shipment shall be determined at the sole discretion of Zurn. Multi product line orders totaling $7,500 can be combined to meet FFA guidelines. Shipping dates are estimates and time of delivery is not the essence of this sale of the contract therefore. Under no circumstances will Zurn have any responsibility on account of any delays in manufacture, transportation, or otherwise.

Limited Warranty

All goods sold hereunder are warranted to be free from defects in material and factory workmanship for a period of one year from the date of purchase. Zurn will replace goods at no cost that prove defective provided Zurn is notified in writing of such defect and the goods are returned to Zurn prepaid at Paso Robles, California, with evidence that they have been properly maintained and used in accordance with instructions. ZURN SHALL NOT BE RESPONSIBLE FOR ANY LABOR CHARGES OR ANY LOSS, INJURY, OR DAMAGES WHATSOEVER, INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES. The sole and exclusive remedy shall be limited to the replacement of the defective goods. Before installation and use, the purchaser shall determine the suitability of the product for his intended use and the purchaser assumes all risk and liability whatever in the connection therewith. Where permitted by law, THE IMPLIED WARRANTY OF MERCHANTABILITY IS LIMITED TO A PERIOD OF ONE YEAR AND SHALL BE LIMITED SOLELY TO THE REPLACEMENT OF THE DEFECTIVE GOODS. A damaged/broken test cock or ball valve is not considered defective. Please reference the Wilkins Rep Guide for assistance. All weights stated in Zurn catalogs and lists are approximate and are not guaranteed.

Illustrations of Typical Installations

The typical installations for various products found in each product section are intended to illustrate the products and potential options for the use of these products. Under no circumstances are they to be construed as recommended installation procedures. Consult local codes and project specifications for proper installation instructions.

Returned Goods

Standard cataloged material may be returned only with written permission of Zurn. Returned goods are subject to a 25% restocking charge of total saleable material returned, plus cost of reconditioning, if necessary, to make material sellable. Transportation charges are the responsibility of the Buyer. Credit allowance will be in the form of merchandise credit only – not cash credit. The value of a return must total at least $50.00 to qualify for credit allowance. A damaged/broken test cock or ball valve is not considered defective. Please reference the Wilkins Rep Guide for assistance. No credit will be allowed for parts unless originally ordered and invoiced as parts. No credit will be allowed for discontinued or made-to-order items. Items that have been specially made are not subject to return or cancellation except by special negotiation. Material must be returned within two years of invoice date for credit to be issued.

Shortage/Damage Claims

Notification of material shortages or incorrect filling of orders must be made to Zurn within 10 days of receipt. No claims over three months old will be honored. Buyer agrees to make all complaints for damage in transit or "short count" directly to the carrier; before the contents are unloaded have the carrier agent's acknowledgement of such damage noted on the bill of lading and to present to the carrier its agent's acknowledgement of such damaged material with formal claim covering said damage.

General

Zurn reserves the right to make changes in design or equipment of any item or product without incurring any obligation on previously sold items, and to discontinue items at any time, without notice. Possession of this Catalog or other sales literature is not to be construed as an offer to sell. All orders are subject to acceptance by the general office of Zurn in Paso Robles, California.

Catalog printed in U.S.A.

3100 Series
Globe Valve

H.D. FOWLER COMPANY

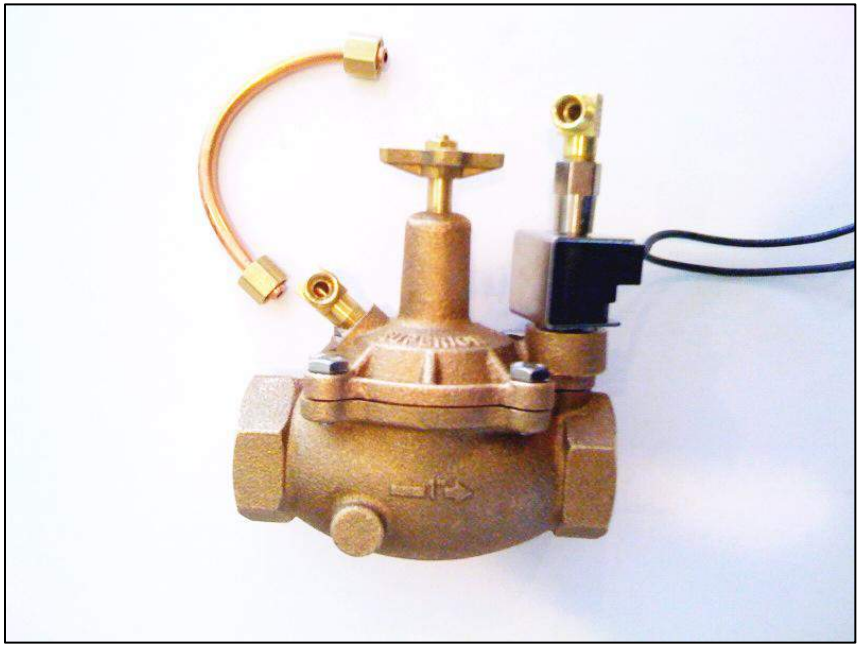
Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

Model 3100
Disassembly Instructions and Troubleshooting
(Applies to Model 3100PRS)

Index

Solenoid Disassembly Instructions

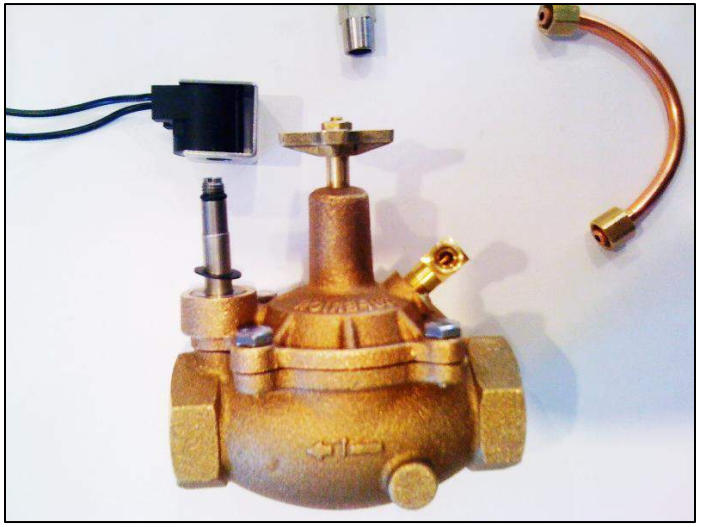
1. Using a ½" wrench, remove copper by-pass tube from top of valve.



2. Remove coupling and L-fitting from top of solenoid by applying a ½" wrench to the coupling. It is not necessary to separate the L-fitting from the coupling.

Solenoid Disassembly Instructions

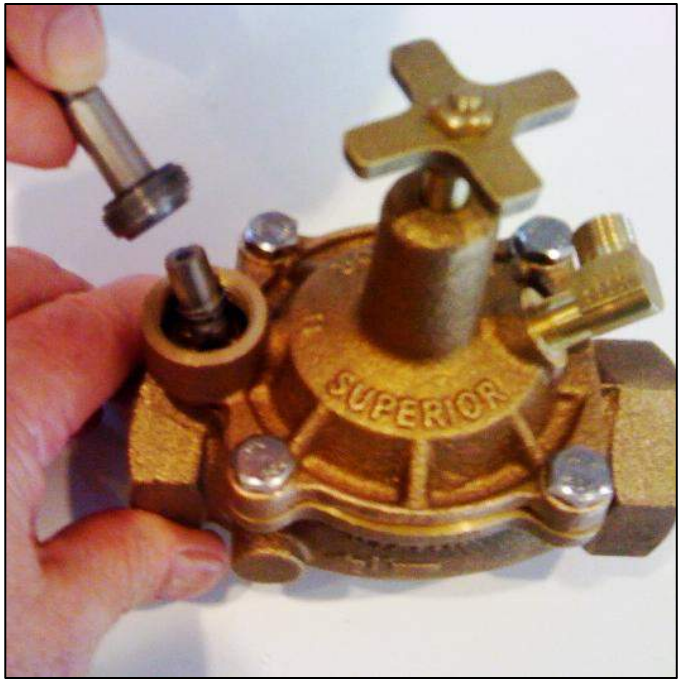
3. Slide coil and U-frame off of solenoid post.



4. Using a flathead screwdriver, remove post from top of valve.

Solenoid Disassembly Instructions

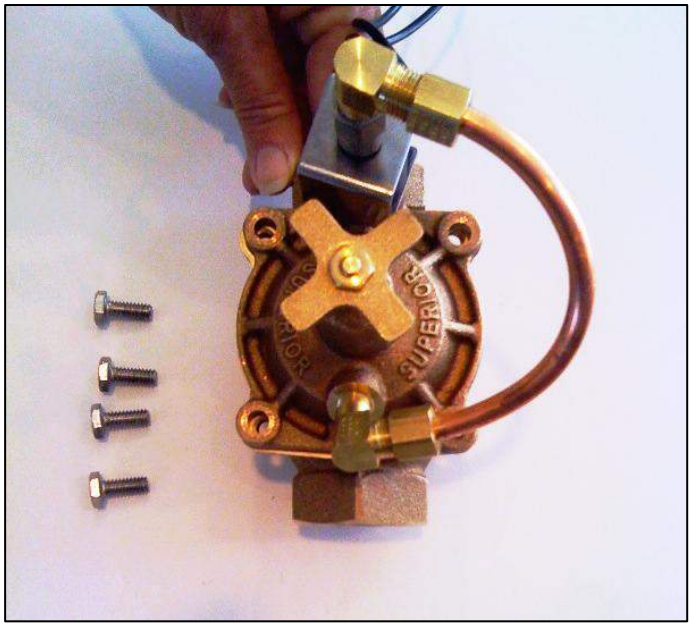
5. As you remove solenoid post, solenoid plunger will drop out of plunger tube.



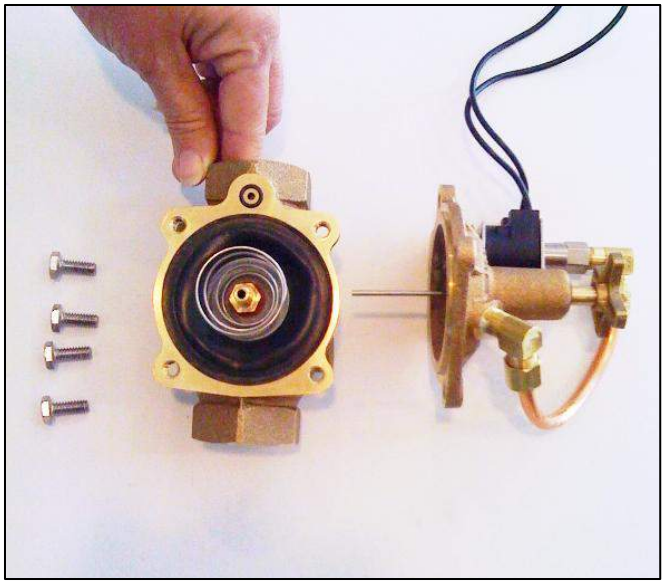
6. After removing the solenoid plunger, all that remains is the o-ring at the bottom. Note that seat has a cross machined in it so water will be able to escape downstream when the solenoid is not energized and valve will remain open.

Valve Disassembly Instructions

1. Remove bolts that fasten top of valve to valve body.

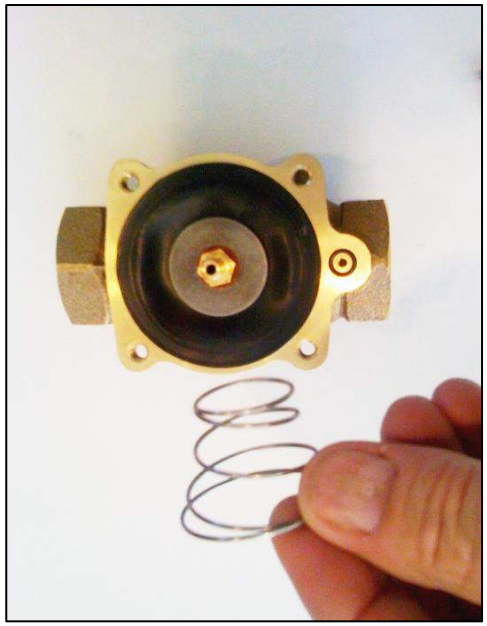


2. Lift top assembly straight up until metering rod clears the top of the diaphragm shaft.



Valve Disassembly Instructions

3. Remove spring from top of diaphragm assembly.



4. Remove diaphragm assembly from valve body.

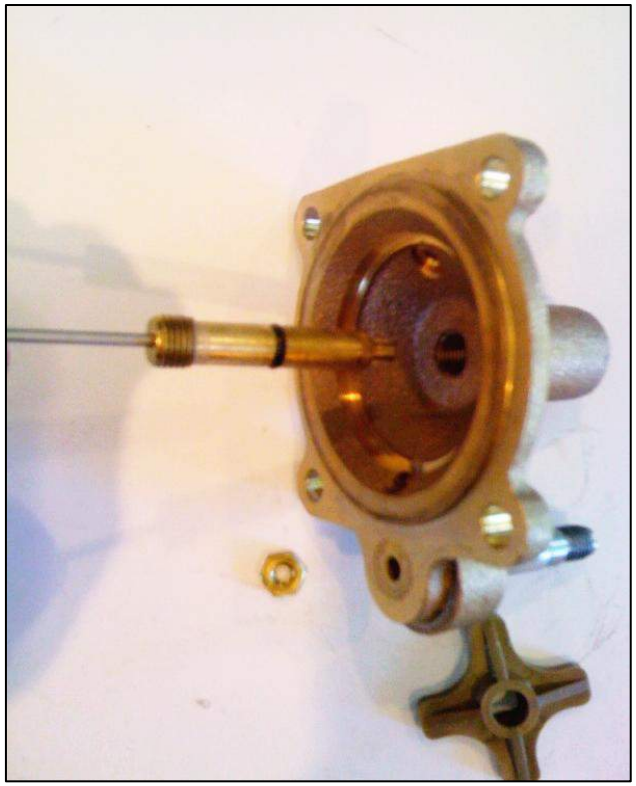
Valve Disassembly Instructions

5. To remove rubber seat disc from diaphragm assembly, unscrew nut at bottom of diaphragm assembly.

6. Completely disassembled diaphragm assembly. From top to bottom: Diaphragm shaft, fiber washer, upper diaphragm plate, diaphragm, lower diaphragm plate, fiber washer, spacer nut, fiber washer, seat disc holder, seat disc, retaining washer, and seat disc nut.

Valve Disassembly Instructions

7. To remove flow control stem from bonnet, remove nut and cross-handle from top of stem, then unscrew flow control stem from underside of bonnet.



Troubleshooting

PROBLEM: Valve will not close when energized.

CAUSE #1: Debris in plunger tube is preventing plunger from sealing port at top of plunger tube.

SOLUTION: Clean plunger tube or replace if necessary.

PROBLEM: Valve will not close when energized.

CAUSE #2: Plunger seat on top side of solenoid plunger is retracted below surface of plunger top. The rubber seat has a spring under it in an opening in the top of the plunger that allows the seat to move up and down. It is possible for the plunger to get stuck below the surface of the plunger top.

SOLUTION: Attempt to dislodge plunger seat or replace if necessary.

Troubleshooting

PROBLEM: Valve will not close when energized.

CAUSE #3: Debris under rubber seat disc is preventing it from seating onto brass seat in valve body.

SOLUTION: Remove diaphragm assembly, check and remove debris in body or in rubber seat disc. If rubber seat is pitted, flip it over or replace it.

PROBLEM: Valve will not close when energized.

CAUSE #4: Torn diaphragm.

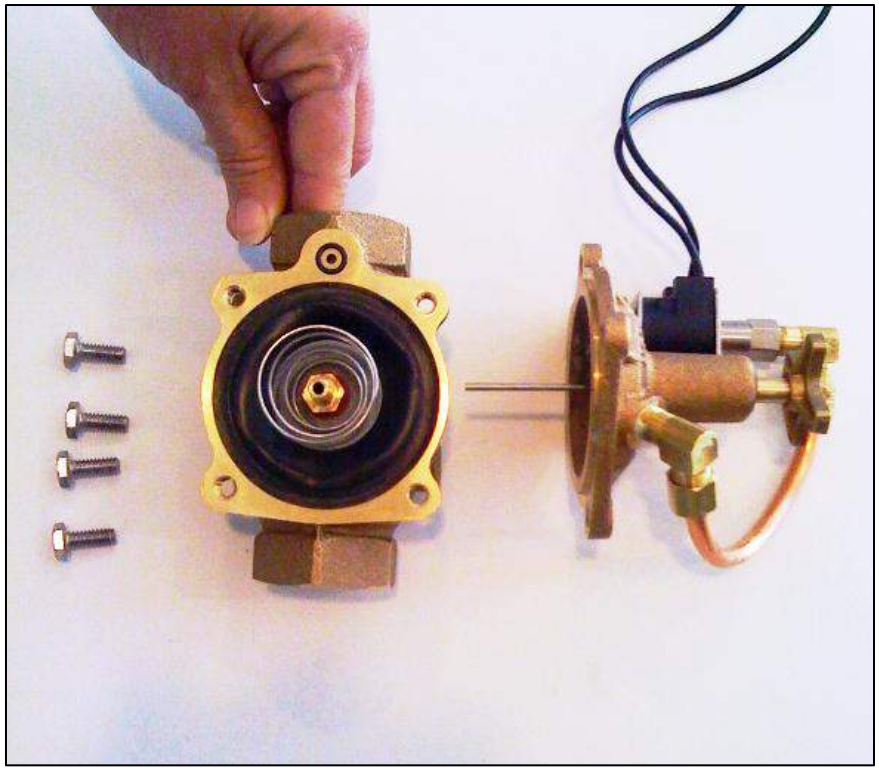
SOLUTION: Disassemble diaphragm assembly and replace diaphragm or replace diaphragm assembly.

Troubleshooting

PROBLEM: Valve will not close when energized.

CAUSE #5: Clogged inlet port at bottom of diaphragm shaft is preventing water from entering upper diaphragm chamber. This can be diagnosed by loosening the compression fitting where copper tubing connects to L-fitting above solenoid. If water does not exhaust out of tubing, this indicates water is not entering upper diaphragm chamber. This needs to be done while valve is pressurized.

SOLUTION: Problem is most likely due to buildup of minerals on metering. Remove top of valve and clean metering rod with emery cloth.



Troubleshooting

PROBLEM: Valve closes or partially closes when solenoid is not energized.

CAUSE #1: Inlet orifice at top of solenoid plunger tube is clogged, or corrosion in solenoid plunger tube is preventing water from escaping at the rate required to keep the valve fully open.

SOLUTION: If port is clogged, clean it with small sharp object such as a paper clip. If corrosion is evident, replace stem and plunger assembly.

PROBLEM: Valve remains closed when solenoid is not energized.

CAUSE #2: Water is entering upper diaphragm chamber at too great of a rate due to: 1) Stainless steel inlet orifice in bottom of diaphragm shaft has fallen out, or 2) metering rod in flow control stem has fallen out.

SOLUTION: If the stainless steel inlet orifice is missing, replace diaphragm shaft or diaphragm assembly. If metering rod is missing, replace flow control stem.

Additional Troubleshooting Applying to 3100PRS

PROBLEM: Valve remains closed when solenoid is not energized.

CAUSE: Adjustment knob on regulator is in “off” position preventing water from passing thru regulator.

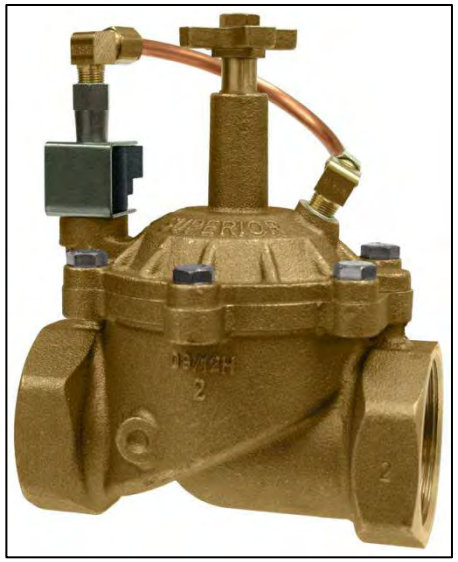
SOLUTION: Raise knob on regulator to unlock it, then rotate knob clockwise, a half turn at a time, until water begins to pass thru valve. Wait until system is fully pressurized then continue to rotate knob clockwise until desired setting is reached. Next, push down on regulator knob to lock it in place.

Troubleshooting

PROBLEM: Valve closes whenever controller energizes a station.

CAUSE: Master valve circuit is also energized causing normally open master valve to close.

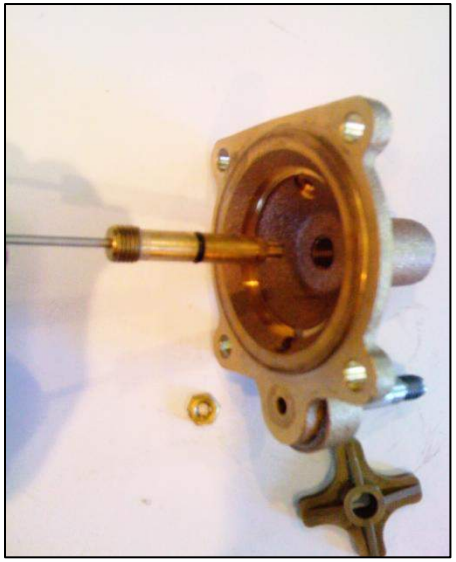
SOLUTION: Follow wiring and/or programming instructions included with controller for connecting to and operating a normally open master valve.



PROBLEM: Water is leaking out around flow control stem.

CAUSE: O-ring on flow control stem is damaged.

SOLUTION: Disassemble flow control stem from bonnet and replace o-ring. Before reassembling stem to bonnet, apply silicone grease to o-ring.



Parts, Sub-Assemblies, and Repair Kits

Solenoid Coil (24 VAC): 16008
Solenoid Stem and Plunger Assembly: 16300
24 VAC 3-Way Solenoid Assembly: 16075
L-Fitting: 16500-1
Copper Tubing (includes compression fittings): ¾" & 1"-16516, 1 ¼"-16517, 1 ½" & 2"-16518, 2 ½" & 3"-16519
Flow-Control Stem (includes o-ring): ¾"-20006-A, 1"-16081, 1 ¼"-16004-1, 1 ½" & 2"-16004, 2 ½" & 3"-19000
Diaphragm: ¾"-16055, 1"-16056-A, 1 ¼"-16057RW, 1 ½" & 2"-16058, 2 ½" & 3"-400028
Regulator (3100PRS): 16525
Repair Kits (includes all rubber and fiber parts): ¾"-17308, 1"-17309, 1 ¼"-17310, 1 ½"-17311, 2"-17312, 2 ½" & 3"-17313
Diaphragm Assemblies: ¾"-16211, 1"-16212, 1 ¼"-16213, 1 ½"-16214, 2"-16215, 2 ½" & 3"-16216
Top Assemblies: ¾"-16280, 1"-16281, 1 ¼"-16282, 1 ½" & 2"-16283, 2 ½" & 3"-16284

SMG - Buckner/Superior Limited Trade Warranty

Buckner/Superior warrants to its trade customers that its products will be free from original defects in material and workmanship for a period of time (commencing on the date of original sale to the trade customer) as follows:

3 YEARS for all Buckner/Superior Brass trademarked products, which include:

- Brass/Plastic body valves
- Brass/Plastic automatic adaptors
- Brass quick coupling valves, keys, and hose swivels
- Brass manual angle valves
- Brass above-ground impact sprinklers
- Brass spray nozzles
- Sterling controllers

2 YEARS for all other products.

Note: Solenoids and pressure gauges are warranted for three years.

This warranty applies only to Buckner/Superior products which are installed as specified and used as intended for irrigation purposes. This warranty applies only to cataloged products which have not been altered, converted, damaged, misused, or misapplied. This warranty does not cover products adversely affected by the system into which the products are incorporated, including improperly designed, installed, operated, or maintained systems, or systems using water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, and scale. This warranty does not cover component failures caused by lightning strikes, electrical power surges, or damage caused by freezing environments. Buckner/Superior's liability is limited to the repair and/or replacement at Buckner/Superior's sole discretion, of products which are returned prepaid through the trade customer to the factory and found by Buckner/Superior to be defective, but in no event shall Buckner/Superior's liability exceed the selling price of the product.

Buckner/Superior makes no other warranties, expressed or implied. No representative, agent, or distributor or other persons has the authority to waive, alter, or add to the printed provisions of this warranty, or to make representation of warranty not contained herein. The sole and exclusive remedy against Buckner/Superior is limited to repair or replacement; Buckner/Superior is not liable for consequential, incidental, indirect, or special damages, including but not limited to labor to inspect, remove, or replace products, vegetation loss, costs of substitute equipment or services, property damage, loss of use or loss of profits; nor is Buckner/Superior liable for economic losses, lost profits, consequential damages or damage to property arising out of Buckner/Superior's negligence or based on strict liability in tort.

The user and/or trade customer agrees to the limitations and exclusion of liability of this warranty by purchase or use of Buckner/Superior products.

Some states do not permit the exclusion or limitation of incidental or consequential damages or of implied warranties. Therefore, some of the exclusions or limitations may not apply to you.

Buckner/Superior reserves the right to redesign, alter or modify its products and shall incur no liability if a trade customer's inventory of Buckner/Superior goods becomes obsolete. Alterations, modifications, and redesign of a product shall not be evidence that the previous product design was defective and the user and/or trade customer so agrees by purchase or use of Buckner/Superior products.

MODEL VB
BRASS VALVE

H.D. FOWLER COMPANY

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

Buckner Model VB
Disassembly Instructions and Troubleshooting

Index

Solenoid Disassembly Instructions

1. Disconnect solenoid lead wires. Next, using your hand, unscrew solenoid from top of valve.

2. Take care as you remove the solenoid as the solenoid plunger will drop out of plunger tube.

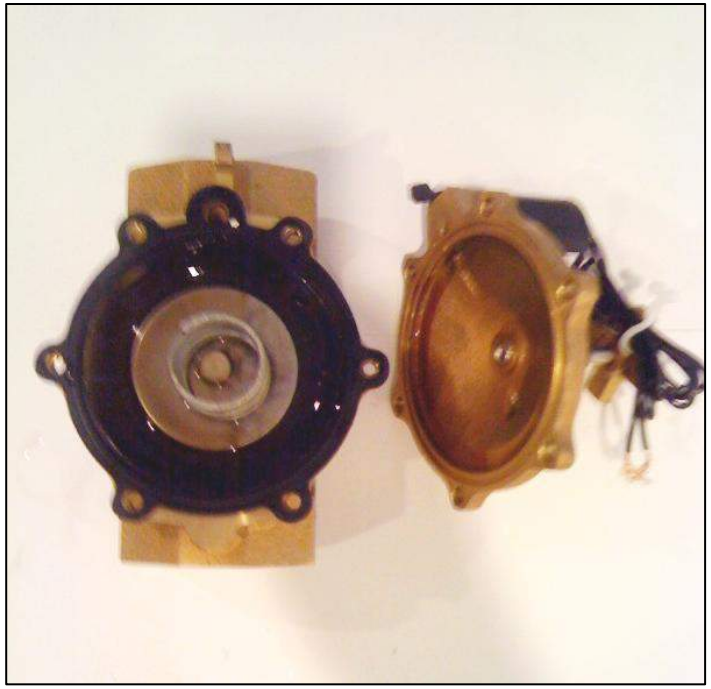
Solenoid Disassembly Instructions

3. Photo shows solenoid cavity. There is a plastic seat that can be removed by pulling the black plastic lever out of the bonnet while the lever is in the down position. The lever is used to open the valve manually. When the lever is raised to the up position, the valve opens. When placed in the down position, the valve closes. Lever kit #LA510841KIT includes ten each of the lever, lever o-rings, and plastic seat.

Valve Disassembly Instructions

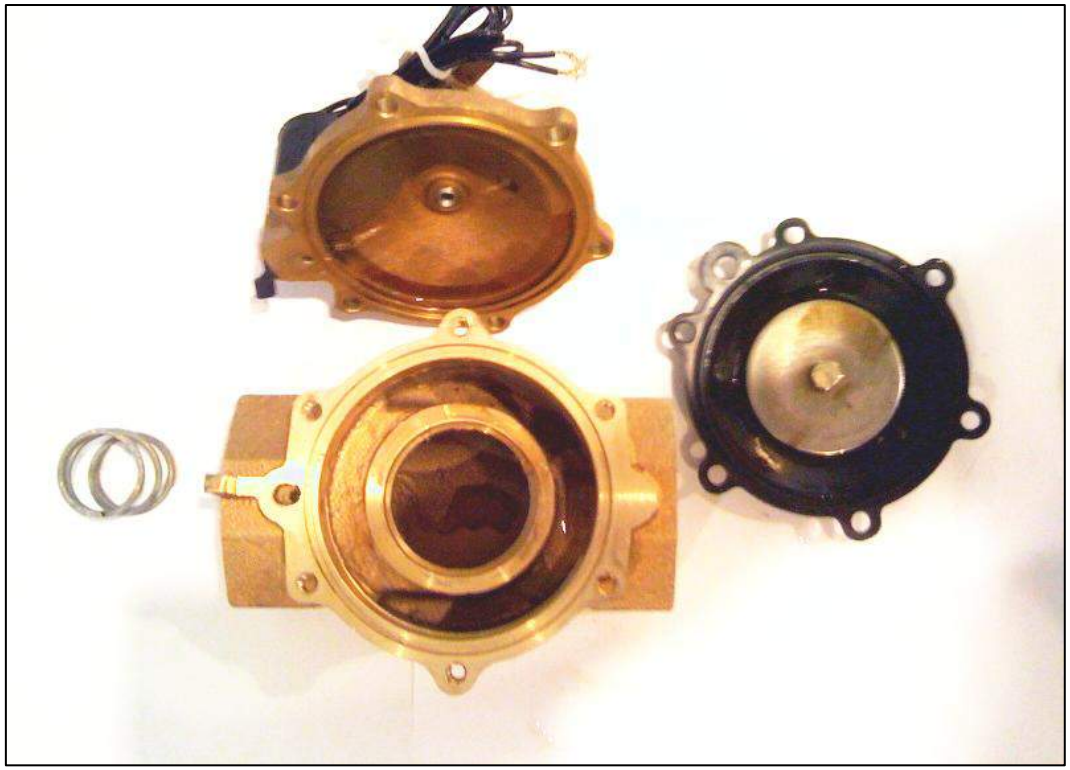
1. Remove top bolts.

2. Lift bonnet assembly off of valve body.



Valve Disassembly Instructions

3. Remove spring and diaphragm assembly from valve body.



Troubleshooting

PROBLEM: Valve will not close.

CAUSE #1: Opening in diaphragm that allows water to enter upper diaphragm chamber is clogged.

SOLUTION: The opening, shown in red circle, needs to be cleaned. If clog is due to nylon fibers, then the opening will need to be punched with a sharp object, but care must be taken not to increase the size of the opening as this may prevent the valve from opening.

PROBLEM: Valve will not close.

CAUSE #2: Stuck solenoid plunger or debris in solenoid cavity that prevents plunger from sealing exhaust port.

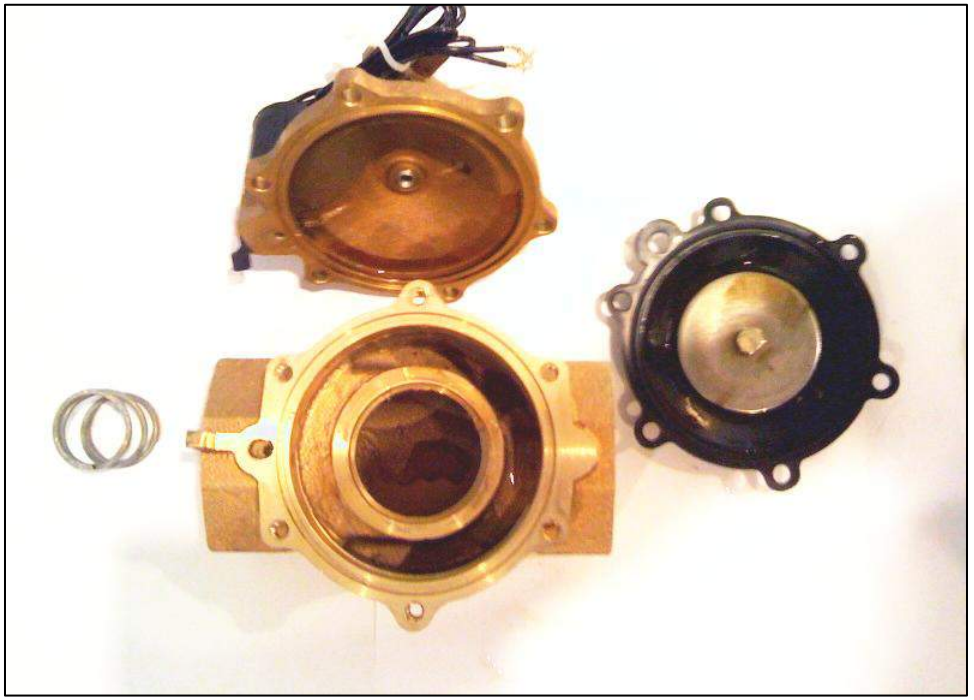
SOLUTION: Remove solenoid. If plunger does not move freely up and down in plunger tube, clean plunger tube and plunger or replace if necessary. If there is debris in the solenoid cavity, remove it.

Troubleshooting

PROBLEM: Valve will not close or closes but water weeps past valve.

CAUSE #3: Debris in valve body and/or debris embedded in rubber seat.

SOLUTION: Disassemble valve and remove debris. If seat is damaged, replace diaphragm/seat assembly.

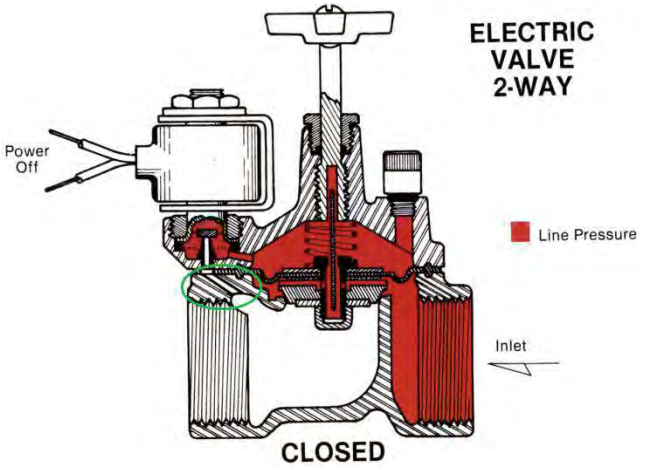


Troubleshooting

PROBLEM: Valve will not open.

CAUSE #1: Exhaust path of water leaving upper diaphragm chamber is impeded.

SOLUTION: Remove solenoid and check passage-way between diaphragm chamber and solenoid chamber. Clean if necessary. If passage is clear, then remove bonnet assembly and check solenoid exhaust passage in body by running a wire down it to see if it is clear. If blocked, attempt to clean with the wire, or use a portable drill to clean passage.



PROBLEM: Valve will not open.

CAUSE #2: Torn diaphragm. The VB model is a reverse flow valve. If the diaphragm tears, the valve closes.

SOLUTION: Replace diaphragm/seat assembly.

Troubleshooting

PROBLEM:: Valve will not open

CAUSE #3: Solenoid not receiving power. This could be do to one of three things: 1) No power output from controller, 2) bad solenoid coil, or 3) broken or disconnected wire.

SOLUTION: Disconnect solenoid leads from valve wires and remove solenoid from valve. Go to controller with solenoid in hand and connect one solenoid lead to common and the other to the station that the valve is connected to. Energize the station manually and see if solenoid plunger gets sucked up into plunger tube. If it does, the problem is a broken or disconnected wire between the controller and valve. If the plunger does not lift, then connect the lead to a station that you know is OK. Energize the station. If plunger does not lift into plunger tube, then solenoid is defective and needs to be replaced.

Troubleshooting

PROBLEM: Water leaks out around manual bleed lever.

CAUSE: Damaged lever o-rings.

SOLUTION: Remove bonnet from valve body. Rotate lever to down position and pull lever out of bonnet. Replace with new lever from lever o-ring kit (kit #LA510841KIT).

Troubleshooting

PROBLEM: Water leaks out around manual bleed screw.

CAUSE: Damaged o-ring on bleed screw.

SOLUTION: Replace manual bleed screw.

Repair Kits

Solenoid Kit (complete coil and post assembly): VBPRASKIT

Bonnet Repair Kit (includes all bonnet assembly parts except for solenoid coil and post assembly):
¾" & 1"-VB0710BKIT, 1 ¼"-VB12BKIT, 1 ½"-VB15BKIT, 2"-VB20BKIT, 2 ½" & 3"-VB2530BKIT

Diaphragm Repair Kit (includes diaphragm assembly and spring): ¾" & 1"-VBPR0710DKIT, 1 ¼"-VBPR12DKIT, 1 ½"-VBPR15DKIT, 2"-VBPR20DKIT, 2 ½" & 3"-VBPR2530DKIT

Lever O-ring Kit (includes lever, o-rings, and plastic solenoid seat—10 sets per kit): LA510841KIT

Manual Bleed Kit: VBBPKIT

SMG - Buckner/Superior Limited Trade Warranty

Buckner/Superior warrants to its trade customers that its products will be free from original defects in material and workmanship for a period of time (commencing on the date of original sale to the trade customer) as follows:

3 YEARS for all Buckner/Superior Brass trademarked products, which include:

- Brass/Plastic body valves
- Brass/Plastic automatic adaptors
- Brass quick coupling valves, keys, and hose swivels
- Brass manual angle valves
- Brass above-ground impact sprinklers
- Brass spray nozzles
- Sterling controllers

2 YEARS for all other products.

Note: Solenoids and pressure gauges are warranted for three years.

This warranty applies only to Buckner/Superior products which are installed as specified and used as intended for irrigation purposes. This warranty applies only to cataloged products which have not been altered, converted, damaged, misused, or misapplied. This warranty does not cover products adversely affected by the system into which the products are incorporated, including improperly designed, installed, operated, or maintained systems, or systems using water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, and scale. This warranty does not cover component failures caused by lightning strikes, electrical power surges, or damage caused by freezing environments. Buckner/Superior's liability is limited to the repair and/or replacement at Buckner/Superior's sole discretion, of products which are returned prepaid through the trade customer to the factory and found by Buckner/Superior to be defective, but in no event shall Buckner/Superior's liability exceed the selling price of the product.

Buckner/Superior makes no other warranties, expressed or implied. No representative, agent, or distributor or other persons has the authority to waive, alter, or add to the printed provisions of this warranty, or to make representation of warranty not contained herein. The sole and exclusive remedy against Buckner/Superior is limited to repair or replacement; Buckner/Superior is not liable for consequential, incidental, indirect, or special damages, including but not limited to labor to inspect, remove, or replace products, vegetation loss, costs of substitute equipment or services, property damage, loss of use or loss of profits; nor is Buckner/Superior liable for economic losses, lost profits, consequential damages or damage to property arising out of Buckner/Superior's negligence or based on strict liability in tort.

The user and/or trade customer agrees to the limitations and exclusion of liability of this warranty by purchase or use of Buckner/Superior products.

Some states do not permit the exclusion or limitation of incidental or consequential damages or of implied warranties. Therefore, some of the exclusions or limitations may not apply to you.

Buckner/Superior reserves the right to redesign, alter or modify its products and shall incur no liability if a trade customer's inventory of Buckner/Superior goods becomes obsolete. Alterations, modifications, and redesign of a product shall not be evidence that the previous product design was defective and the user and/or trade customer so agrees by purchase or use of Buckner/Superior products.

950 Series
Brass Valve

H.D. FOWLER COMPANY

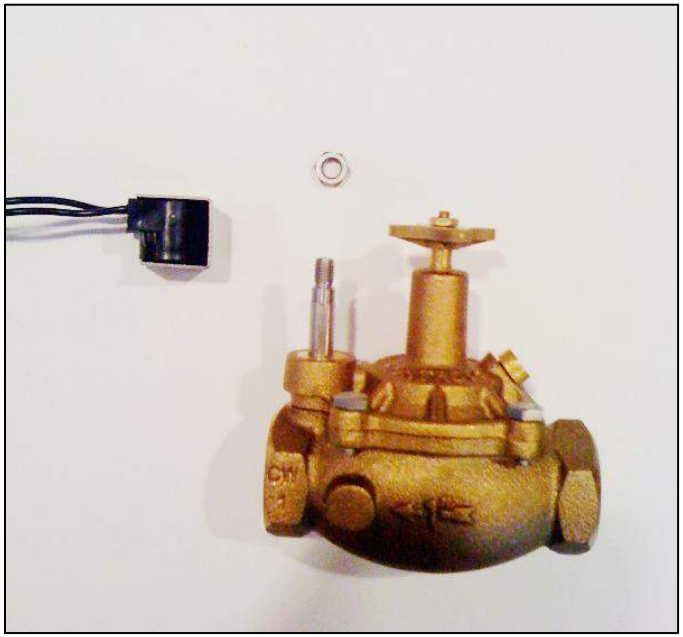
Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

950 Series
Disassembly Instructions and Troubleshooting
(Also Applies to 950PRS)

Index

Solenoid Disassembly Instructions

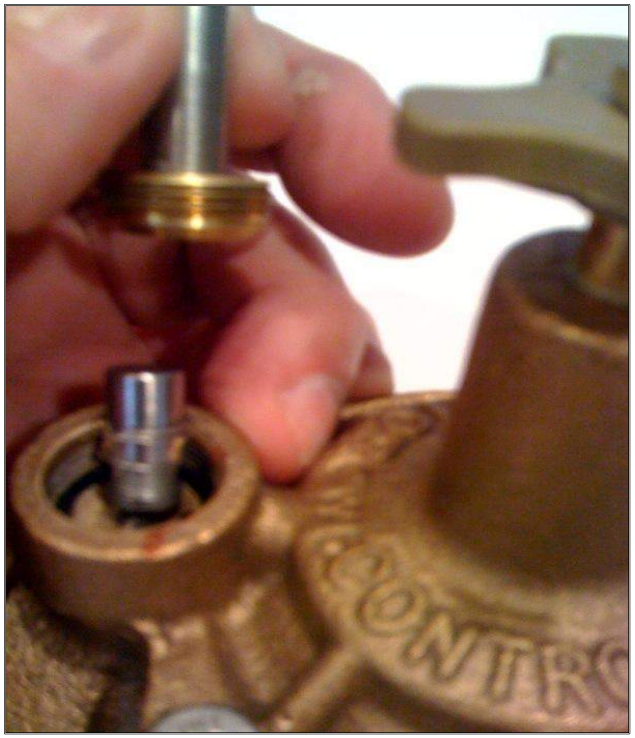
1. Unscrew and remove retaining nut from solenoid post and slide coil and U-frame off of solenoid post.



2. Using a flathead screwdriver, unscrew and remove solenoid post from top of valve.

Solenoid Disassembly Instructions

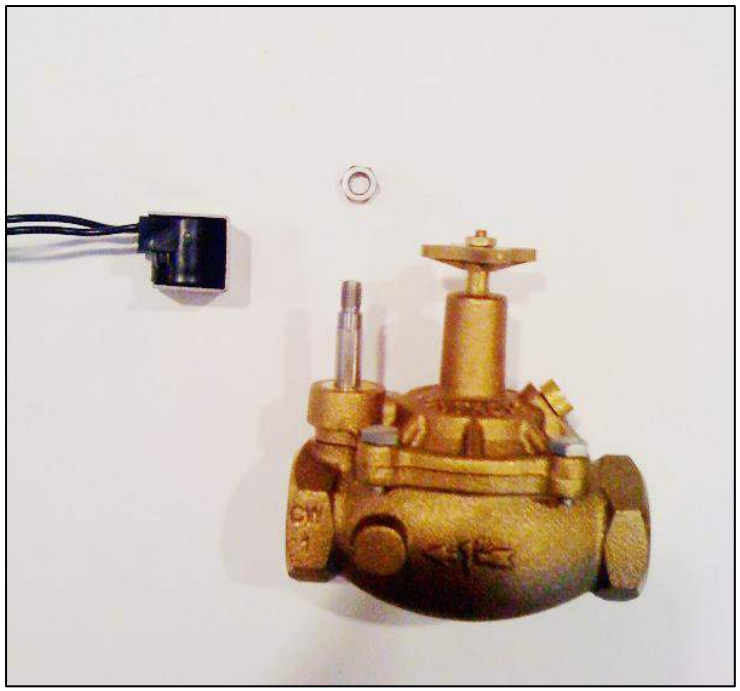
3. Solenoid plunger will drop out of plunger tube as post is removed from solenoid cavity.



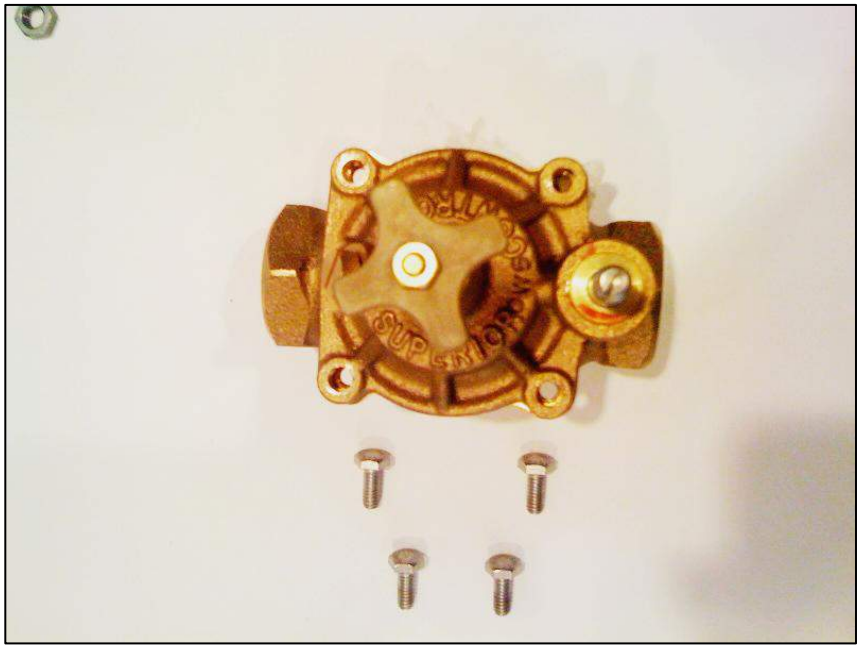
Solenoid cavity. The center port is the exhaust port. The other port connects the solenoid cavity to the diaphragm chamber

Valve Disassembly Instructions

1. Remove solenoid retainer nut and slide solenoid coil and U-frame off of solenoid post



2. Unscrew bolts that fasten valve bonnet to valve body.



Valve Disassembly Instructions

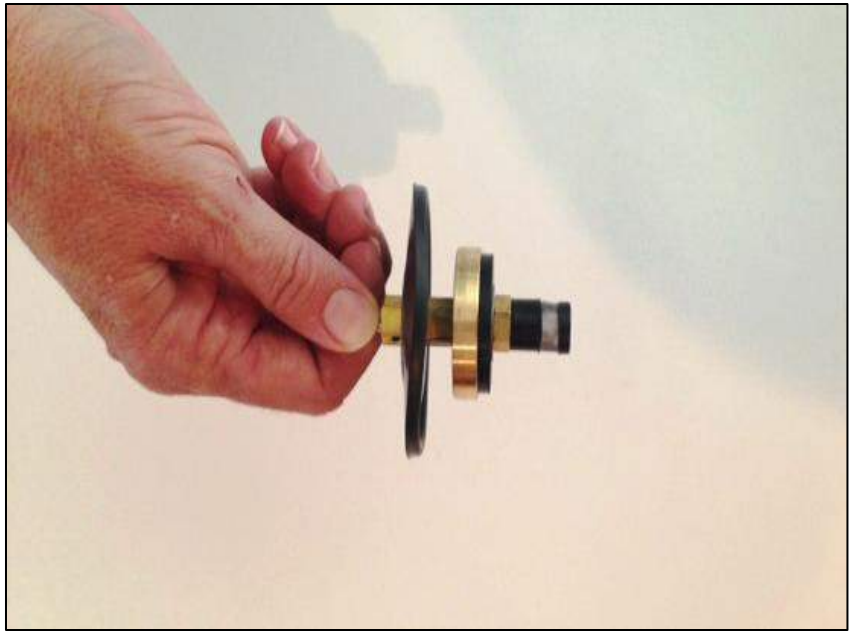
3. Lift bonnet straight up off of valve body taking care that the metering in bonnet exits top of diaphragm shaft.

4. Remove diaphragm spring from top of diaphragm assembly

Valve Disassembly Instructions

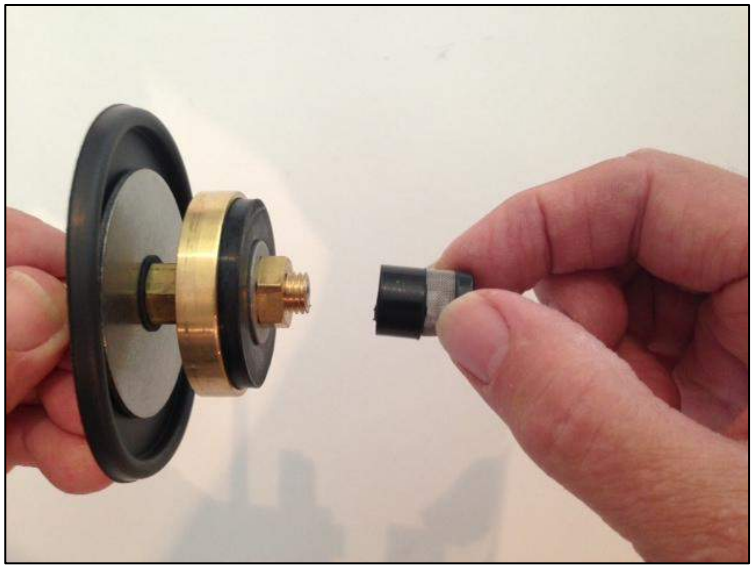
5. Remove diaphragm assembly from valve body.

6. This photo shows the diaphragm assembly of the 950DW, 950DWIB, and 950PRS. The only difference is the filter that is screwed onto the bottom of the shaft.



Valve Disassembly Instructions

8. For 950DW, 950DWIB, and 950PRS models, unscrew filter from bottom of shaft.

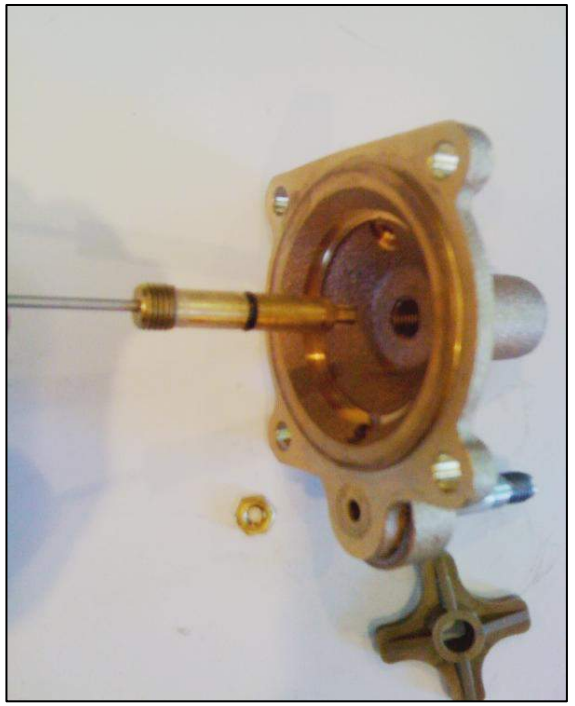


9. To access rubber seat disc, unscrew retainer nut from bottom of shaft and remove retaining washer, brass disc-holder, and rubber seat disc.

Valve Disassembly Instructions

7. Completely disassembled diaphragm assembly.

8. To remove flow control stem from bonnet, remove nut and cross-handle from top of stem, then unscrew flow control from underside of bonnet.



Troubleshooting

PROBLEM: Valve will not close.

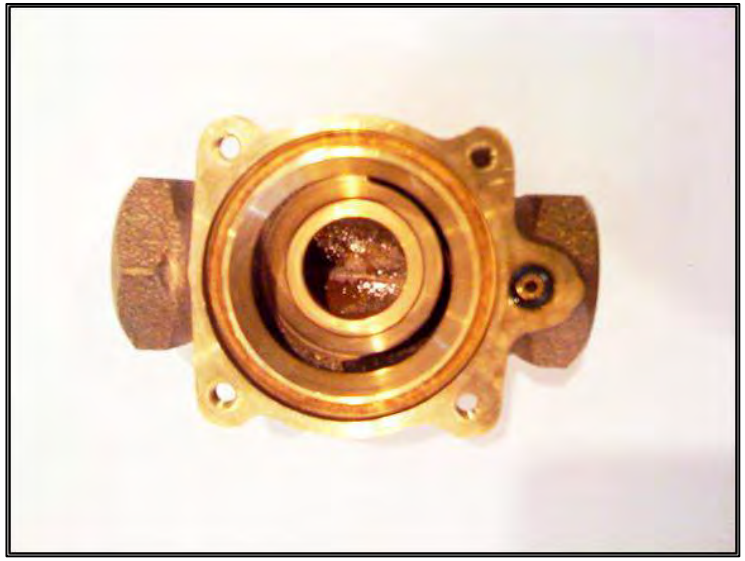
CAUSE #1: Malfunctioning solenoid. Solenoid plunger is unable to seal exhaust port due to debris in solenoid cavity or plunger being stuck in plunger tube and unable to drop.

SOLUTION: Remove debris from solenoid and/or clean plunger and plunger tube. Replace stem and plunger assembly if necessary.

PROBLEM: Valve will not close.

CAUSE #2: Debris in valve body prevents rubber seat from fully closing onto brass seat.

SOLUTION: Remove debris from valve body.



Troubleshooting

PROBLEM: Valve will not close (or closes but weeps).

CAUSE #3: Debris embedded in rubber seat of diaphragm assembly or rubber seat is pitted.

SOLUTION: Disassemble lower portion of diaphragm assembly, flip rubber seat disc or replace with a new one.

PROBLEM: Valve will not close.

CAUSE #4: Torn diaphragm.

SOLUTION: Replace diaphragm assembly or disassemble diaphragm assembly and replace diaphragm.

Troubleshooting

PROBLEM: Valve will not open.

CAUSE #1: Solenoid is not receiving power. Check as follows: 1) Energize solenoid at controller. The solenoid should vibrate enough that it can be felt when coil is touched. 2) As an additional check, remove coil and solenoid stem and plunger from bonnet. Have another person energize solenoid at controller while you are holding solenoid with thumb pressing up on plunger so that plunger is most of the way up plunger tube. Plunger should be sucked up all the way in tube when coil is energized.

If solenoid is not receiving power, disengage solenoid lead wires from valve wires and go to controller with solenoid assembly. Attach one solenoid lead to common terminal and other to a station terminal. Energize the station while holding solenoid in manner described above. If solenoid plunger is sucked into cylinder, then solenoid is OK. Problem is damaged wire between controller and valve.

SOLUTION: Replace solenoid coil if bad.

Troubleshooting

PROBLEM: Valve will not open.

CAUSE #2: Clogged inlet orifice as indicated by water not exiting manual bleeder when opened. The likely cause is a mineral buildup on metering rod.

SOLUTION: Remove bonnet assembly and clean metering rod with emery cloth.

PROBLEM: Valve will not open.

CAUSE #3: Clogged solenoid exhaust port.

SOLUTION: Run a wire down exhaust port. If necessary, remove bonnet and run a drill down exhaust port into opening of valve.

Troubleshooting

PROBLEM: Valve will not open.

CAUSE #4: Dislodged stainless steel inlet orifice enabling water to enter upper diaphragm chamber faster than it can exit through the solenoid exhaust port. This condition is revealed by an excessive amount of water exhausting out of manual bleeder when opened.

SOLUTION: Replace diaphragm shaft .

PROBLEM: Water leaks out around flow-control stem.

CAUSE: Torn or damaged flow-control o-ring.

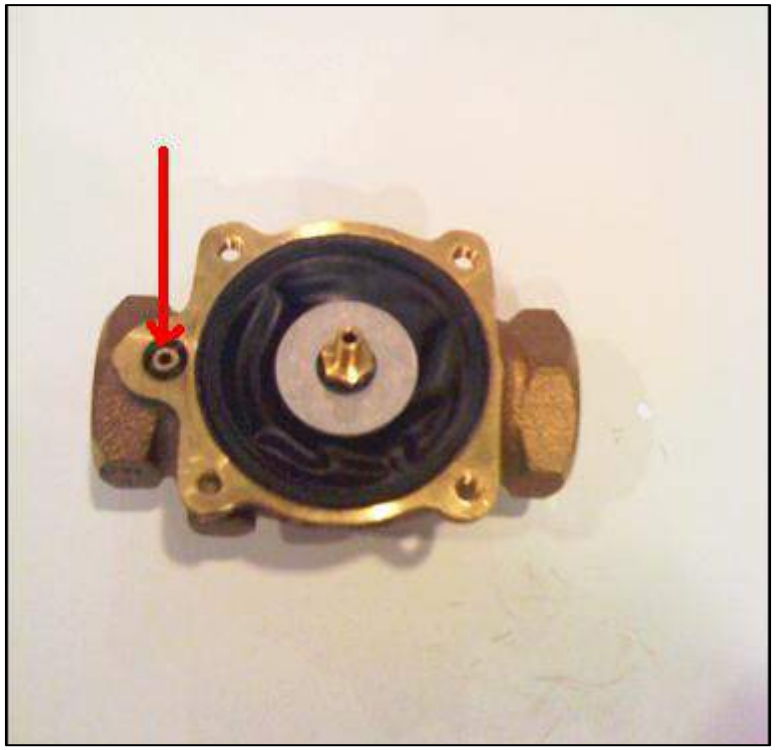
SOLUTION: Remove flow-control stem from bonnet and replace o-ring. Apply silicone grease to o-ring before reassembling stem into bonnet.

Troubleshooting

PROBLEM: Water leaks out of valve between bonnet and body in area below solenoid.

CAUSE: Damaged or missing exhaust o-ring.

SOLUTION: Remove bonnet and replace o-ring. It may be necessary to scrape remnants of the o-ring from the o-ring groove using a sharp object. This is because the o-ring was set in groove with epoxy.

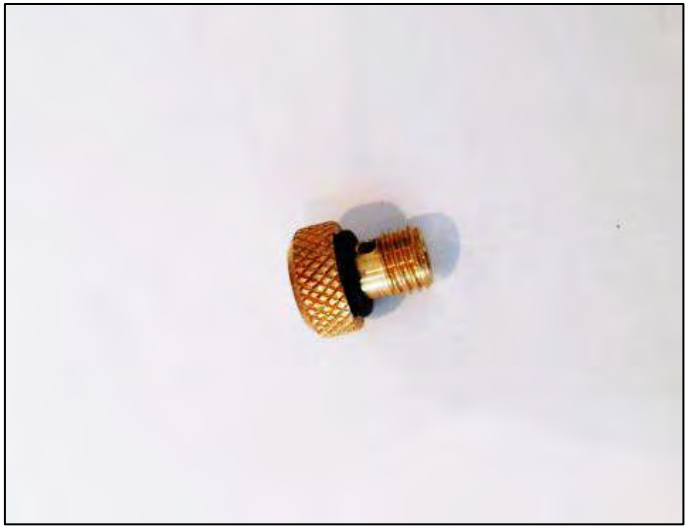


Troubleshooting

PROBLEM: Water leaks out around manual bleed screw.

CAUSE #1: Damaged o-ring on manual bleed screw.

SOLUTION: Replace manual bleed screw.



PROBLEM: Water leaks out around manual bleed screw.

CAUSE #2: Bleed screw unable to screw all the way down due to disappearing threads in opening. This is caused by a transfer of metal between threads of bleed screw and female threads in opening.

SOLUTION: Using a 5/16”-24 tap, rethread opening and replace bleed screw with a new one.

Additional Troubleshooting Applying to 950PRS

PROBLEM: Water weeps past valve and seeps out of lowest head in system.

CAUSE: If the solenoid has been checked and is OK and the interior of the valve has been checked for debris but none is found, then the likely cause is a defective manual bleed valve. To verify, remove the plastic tubing from the barbed fitting on the manual bleed valve. The best way is to slit the end of the tubing about ¼" with a knife or razor blade and pull the tubing off of the barb. If water, even a very small amount, exhausts from the manual bleed valve when it is in the "off" position, then the manual bleed valve is defective.

SOLUTION: Replace the manual bleed valve and reconnect the tubing after slicing the end of the tubing just below the slit that was made in order to remove the tubing.

Additional Troubleshooting Applying to 950PRS

PROBLEM: Valve will not open electrically or by opening the manual bleed valve.

CAUSE: Adjustment knob on regulator is in “off” position preventing water from passing thru regulator.

SOLUTION: Open manual bleed valve by turning handle in counter-clockwise direction. Next, raise knob on regulator to unlock it, then rotate knob clockwise, a half turn at a time, until water begins to pass thru valve. Wait until system is fully pressurized then continue to rotate knob clockwise until desired setting is reached. Next, push down on regulator knob to lock it in place, then close manual bleed valve.

Parts, Sub-Assemblies, and Repair Kits

Solenoid Coil (24 VAC): 16008

Solenoid Stem and Plunger Assembly: 16010-2A

Solenoid Assembly (24VAC): 16200

Manual Bleed Screw (includes o-ring): 15013 (all sizes)

Manual Bleed Ball Valve-950PRS, 950DWIB: 16551 (all sizes) Note: Replaces Manual Bleed Needle Valve

Flow-Control Stem (includes o-ring): ¾”-2006-A, 1”-16081, 1 ¼”-16004-1, 1 ½” & 2”-16004, 2 ½” & 3”-19000

Diaphragm: ¾”-16055, 1”-16056-A, 1 ¼”-16057RW, 1 ½” & 2”-16058, 2 ½” & 3”-400028

Diaphragm Assembly-950: ¾”-16211, 1”-16212, 1 ¼”-16213, 1 ½”-16214, 2”-16215, 2 ½” & 3”-16216

Diaphragm Assembly-950DW, 950PRS, 950DWIB: Add –L to above numbers (i.e. 1”-16212-L)

Repair Kits (includes all rubber and fiber parts): ¾”-17308, 1”-17309, 1 ¼”-17310, 1 ½”-17311, 2”-17312
2 ½” & 3”-17313

Top Assembly-950, 950DW : ¾”-16201, 1”-16202,
1 ¼”-16203, 1 ½”-16204, 2”-16205, 2 ½” & 3”-16220

Top Assembly-950PRS: Add –M to above numbers (i.e. 1 ½”-16204-M
(i.e. 1 ½”-16204-M)

Pressure Regulator-950PRS: 16525

T-Tubing Assembly-950PRS: 1”-16513, 1 ¼” thru 2”-16514, 2 ½” & 3”-165150

SMG - Buckner/Superior Limited Trade Warranty

Buckner/Superior warrants to its trade customers that its products will be free from original defects in material and workmanship for a period of time (commencing on the date of original sale to the trade customer) as follows:

3 YEARS for all Buckner/Superior Brass trademarked products, which include:

- Brass/Plastic body valves
- Brass/Plastic automatic adaptors
- Brass quick coupling valves, keys, and hose swivels
- Brass manual angle valves
- Brass above-ground impact sprinklers
- Brass spray nozzles
- Sterling controllers

2 YEARS for all other products.

Note: Solenoids and pressure gauges are warranted for three years.

This warranty applies only to Buckner/Superior products which are installed as specified and used as intended for irrigation purposes. This warranty applies only to cataloged products which have not been altered, converted, damaged, misused, or misapplied. This warranty does not cover products adversely affected by the system into which the products are incorporated, including improperly designed, installed, operated, or maintained systems, or systems using water containing corrosive chemicals, electrolytes, sand, dirt, silt, rust, and scale. This warranty does not cover component failures caused by lightning strikes, electrical power surges, or damage caused by freezing environments. Buckner/Superior's liability is limited to the repair and/or replacement at Buckner/Superior's sole discretion, of products which are returned prepaid through the trade customer to the factory and found by Buckner/Superior to be defective, but in no event shall Buckner/Superior's liability exceed the selling price of the product.

Buckner/Superior makes no other warranties, expressed or implied. No representative, agent, or distributor or other persons has the authority to waive, alter, or add to the printed provisions of this warranty, or to make representation of warranty not contained herein. The sole and exclusive remedy against Buckner/Superior is limited to repair or replacement; Buckner/Superior is not liable for consequential, incidental, indirect, or special damages, including but not limited to labor to inspect, remove, or replace products, vegetation loss, costs of substitute equipment or services, property damage, loss of use or loss of profits; nor is Buckner/Superior liable for economic losses, lost profits, consequential damages or damage to property arising out of Buckner/Superior's negligence or based on strict liability in tort.

The user and/or trade customer agrees to the limitations and exclusion of liability of this warranty by purchase or use of Buckner/Superior products.

Some states do not permit the exclusion or limitation of incidental or consequential damages or of implied warranties. Therefore, some of the exclusions or limitations may not apply to you.

Buckner/Superior reserves the right to redesign, alter or modify its products and shall incur no liability if a trade customer's inventory of Buckner/Superior goods becomes obsolete. Alterations, modifications, and redesign of a product shall not be evidence that the previous product design was defective and the user and/or trade customer so agrees by purchase or use of Buckner/Superior products.

640 Series Rotars

H.D. FOWLER COMPANY

Marysville Branch
6017 29th Drive NE
Marysville, WA 98271
(360) 651-2400
(800) 819-5859
(360) 658-5305 Fax

Installation and Service Instructions

640 Series Rotary Sprinkler

Installation Procedure

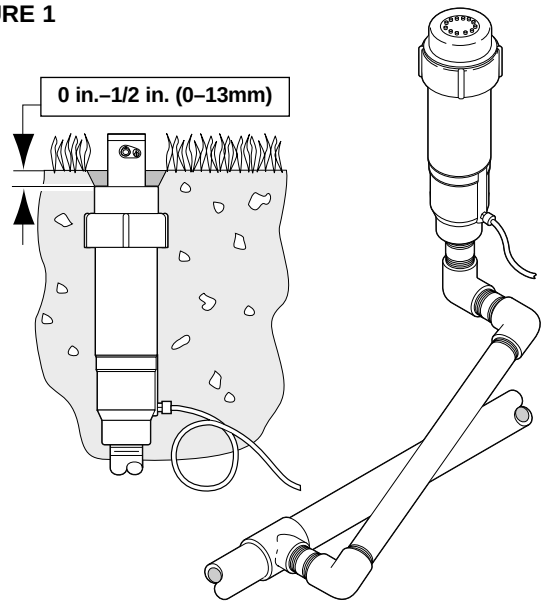
To assure maximum performance from your 640 Series Rotary Sprinklers, read these instructions completely prior to installing or servicing the sprinkler.

Construct Swing Joints

1. Construct triple swing joints for each sprinkler as shown in Figure 1. Use PVC or ABS pipe nipple for sprinkler connection.

   Note: *On sites where the possibility of heavy equipment rolling over a sprinkler exists, the swing joint will flex preventing damage to the lateral or main lines. On a new installation in raw ground where the sprinklers are to be initially installed above the finished grade and lowered when new turf is established, the swing joint allows sprinkler repositioning without changing risers. This is a common and practical procedure which eliminates the problem of dirt being accidentally introduced into the lateral lines when a riser is changed.*
2. Flush lines thoroughly prior to installing sprinkler.
3. Apply Teflon™ tape on riser threads. Install sprinkler to riser and tighten.

FIGURE 1



CAUTION

Use only Teflon tape on riser threads. Use of pipe dope or other types of sealing compounds can cause deterioration of plastic threads and components.

4. Install sprinkler on riser. Align part-circle heads by rotating sprinkler body on riser until radius adjustment slot on top of the nozzle rubber cover is positioned to the left side of the intended coverage area.
5. **Valve-In-head models only:** Remove tube retainer and cap from sprinkler fitting. Provide a service loop in control tube at sprinkler to prevent binding. Slide tube retainer over end of control tube. Push control tube onto sprinkler fitting and secure with tube retainer.
6. Install sprinklers flush with grade to 1/2 in. (0–13mm) below grade.
7. Backfill and compact soil around sprinkler avoiding contact with nozzle assembly.

Servicing the Sprinkler

Valve Replacement

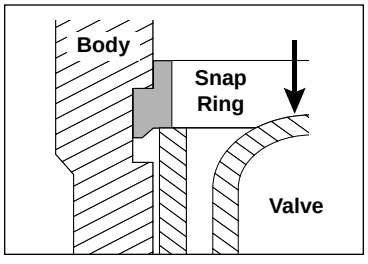
WARNING

POSITIVELY SHUT OFF WATER SUPPLY AT SOURCE PRIOR TO DISASSEMBLING SPRINKLER. BLEED ALL PRESSURE FROM SPRINKLER SYSTEM INCLUDING CONTROL TUBES. FAILURE TO DEPRESSURIZE SYSTEM PRIOR TO VALVE SNAP RING REMOVAL MAY CAUSE VALVE MECHANISM TO FORCIBLY EJECT FROM SPRINKLER BODY RESULTING IN POSSIBLE SERIOUS INJURY.

1. Remove cap set screw with 1/8 in. hex wrench and unscrew cap.
2. Remove nozzle container seal, nozzle retainer and nozzle/drive assembly from body.
3. Depress valve mechanism using a long screwdriver or similar tool (see CAUTION below).

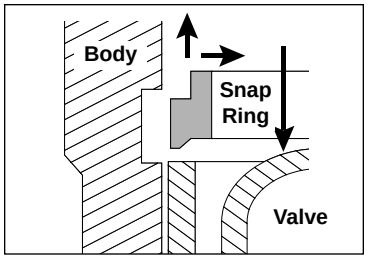
CAUTION

Do not continue valve removal procedure if the valve cannot be pressed down with minimum force. Confirm that water pressure is off and the control tube is bled before continuing.



4. With the valve depressed, grasp snap ring "ears" with TORO snap ring pliers (Model No. 995-07), release snap ring from groove and remove from body.
5. Remove valve mechanism with TORO Valve Removal Tool (Model No. 995-08) or carefully grasp one valve rib with snap ring pliers, pulling valve up and out of body.
6. Reassemble valve mechanism in reverse order.

   Note: *Due to limited work space in 640 sprinklers, use of Toro Valve Insertion Tool (Model No. 995-35) is recommended to simplify valve and snap ring installation.*
7. See **Reinstalling Nozzle/Drive Assembly**.



Changing Nozzle and Stator

Note: *Nozzle changes may be accomplished by changing the entire nozzle assembly or by removing the nozzle container end changing only the upper nozzle. In either case, the appropriate matching stator must be installed (i.e., No. 42 Nozzle and No. 42 Stator, etc.) to ensure proper sprinkler operation.*

Changing Complete Nozzle Assembly

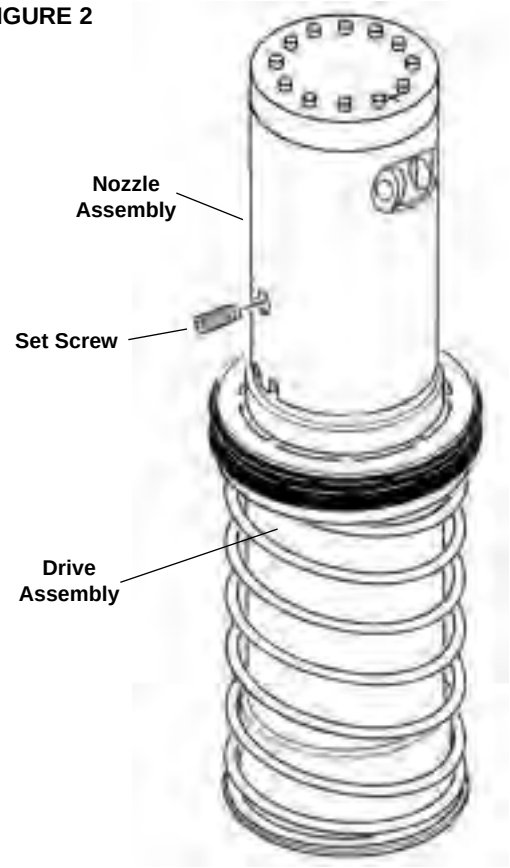
1. Remove cap set screw with 1/3 in. hex wrench and unscrew cap.
2. Remove nozzle container seal, nozzle retainer and nozzle/drive assembly from body.
3. Remove 1/16 in. allen set screw in side of nozzle canister.
4. Unscrew nozzle assembly from drive assembly.
5. Assure nozzle seal is located at bottom of nozzle base threads.
6. Install new nozzle assembly — HAND-TIGHTEN ONLY, DO NOT OVER-TORQUE.
7. Turn set screw clockwise until contact with riser threads is made (see CAUTION below).

CAUTION

Do not over-torque set screw. Over-tightening will cause thread damage and possible water leak between lower nozzle base and drive assembly.

8. Remove boss on nozzle rubber cover to identify drive assembly arc.

FIGURE 2



Changing Upper Nozzle

Note: *Some of the nozzle assembly components shown in the following procedure are no longer available from Toro as service parts. This procedure should only be used if the upper nozzle assembly is already on hand.*

1. Remove cap set screw with 1/8 in. hex wrench and unscrew cap.
2. Remove nozzle container seal, nozzle retainer and nozzle/drive assembly from body.
3. Straighten locking tabs on nozzle container with nozzle container removal tool, Model No. 995-42 or other appropriate tool (see Figure 3).
4. Remove nozzle container, nozzle screws and upper nozzle assembly (see Figure 4).
5. Position new upper nozzle assembly and secure with nozzle screws. DO NOT OVER-TIGHTEN SCREWS. (See Figure 4 and Note below.)

   Note: *Over-tightening nozzle screws will expand plastic nozzle base causing difficult nozzle container replacement.*

FIGURE 3

6. Align nozzle opening in container with nozzle orifices and press container downward until fully seated on nozzle assembly.
7. Bend locking tabs into notches approximately 90° to secure nozzle container.

Changing Stator

1. Place nozzle/drive assembly on a flat work surface, nozzle down, and compress return spring to expose stator assembly (see Figure 5).
2. Separate stator from drive assembly (held together by press fit) and CAREFULLY relieve return spring tension.
3. Press in new stator assembly to fully seated position.

FIGURE 4

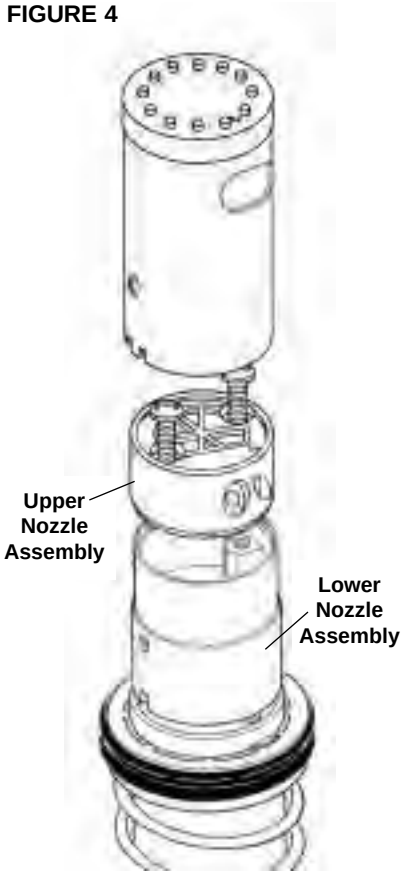
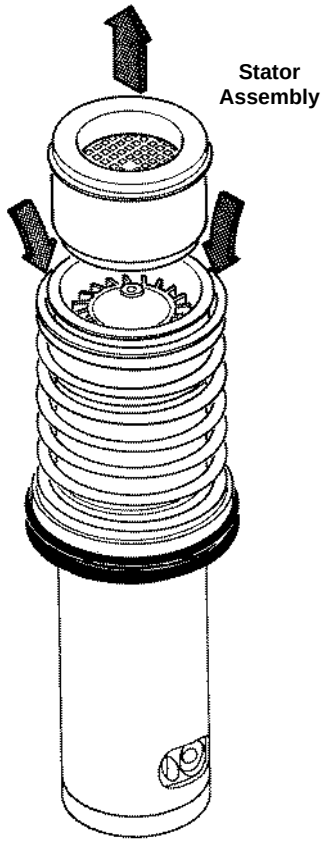


FIGURE 5



Reinstalling Nozzle/Drive Assembly

1. **Part Circle Only:** Holding drive assembly stationary, slowly rotate nozzle assembly counterclockwise to left side of arc pattern (see Figure 6).
2. Check drive assembly key tab for approximately 30° upward bend, adjust if necessary (see Figure 7).
3. Insert nozzle/drive assembly into body until seal is approximately one (1) inch below top of body.
   Part Circle Only: Align main nozzle orifice with left edge of watering arc before inserting (see Figure 8).
4. Place nozzle retainer over nozzle assembly aligning keyway and drive assembly key (see Figure 9).

FIGURE 6

FIGURE 7

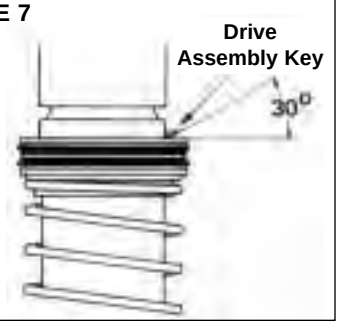


FIGURE 8

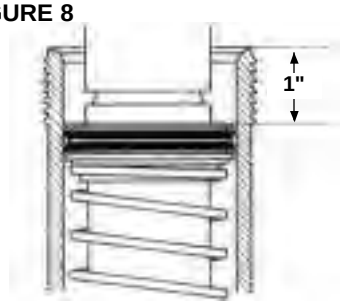
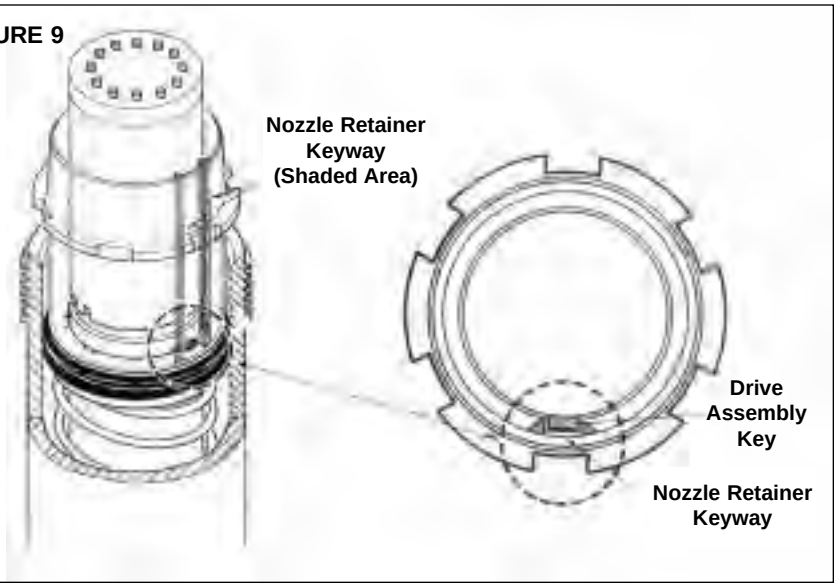


FIGURE 9



5. Rotate nozzle retainer, interlocked with nozzle/drive assembly, to align the nearest of six (6) alignment slots with tabs on body (see Figure 10).
6. Press retainer into body to interlock alignment slot and body tab.
7. Install riser seal over nozzle assembly placing peg into retainer keyway (see Figure 11).
8. Install cap and secure with set screw.
9. Check watering arc. If minor adjustments are required (1/6 of a turn or less); rotate sprinkler body on riser. **Do not make adjustments by turning nozzle assembly** (see CAUTION below).

CAUTION

Rotating nozzle assembly to make watering arc adjustments may cause severe internal damage to drive assembly.

Note: Refer to Illustrated Parts Breakout Book Form No. 368-0044 for current parts listing.

FIGURE 10

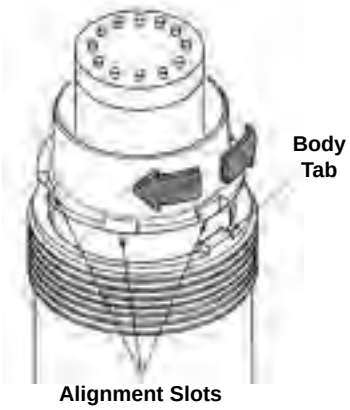
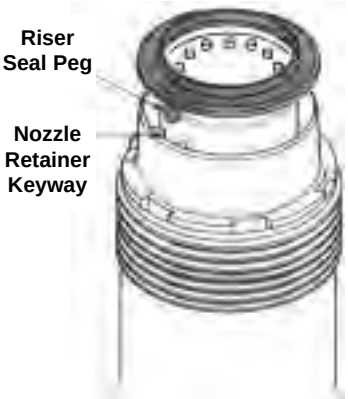


FIGURE 11



TORO

Irrigation Division • An ISO 9001-Certified Facility
P.O. Box 489 • Riverside, CA 92502
Printed in U.S.A.

Toro Limited Warranty for Irrigation Products

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrants to the owner each new piece ofirrigation product (featured in the current catalog at date of installation) against defects in material and workmanship for a period described herein, provided they are used for irrigation purposes under manufacturer's recommended specifications.

During the warranty period, we will repair or replace, at our option, any part found to be defective. Your remedy is limited solely to the replacement or repair of defective parts. This warranty does not apply (i) to Acts of God (e.g., lightning, flooding, etc.) unless specifically listed under the Extended Lightning Protection Warranty provided herein; or (ii) to products not manufactured by Toro when used in conjunction with Toro products; or (iii) where equipment is used or installation is performed in any manner contrary to Toro's specifications and instructions, or where equipment is altered or modified.

Return the defective part to your irrigation contractor or installer, or your local distributor who may be listed in your telephone/web directory under "Irrigation Supplies" or "Sprinkler Systems", or contact The Toro Warranty Company, 5825 Jasmine Street, Riverside, California, 92504, phone (877) 345-8676, for the location of your nearest Toro distributor, or outside the U.S., call (951) 688-9221.

Neither Toro nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of equipment, including but not limited to vegetation loss, the cost of substitute equipment or services required during periods of malfunction or resulting non-use, property damage or personal injury resulting from installer's actions, whether negligent or otherwise. Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you.

All implied warranties, including those of merchantability and fitness for use, are limited to the duration of this express warranty. Some states do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to you.

This warranty gives you specific legal rights and you may have other rights, which vary from state to state.

Standard Warranty
Toro Irrigation Division products are covered by this warranty for a period of two years from the date of installation, except as otherwise noted.

Extended Three-Year Warranty
The following products are covered by this warranty for three years from date of
Wyr eACFGx f f e™WP Controller.

Extended Five-Year Warranty
The following products are covered by this warranty for five years from date of
W **Sprays**WRE uv 570Z PRX Series ; **Rotors:** T5, TR50XT, T7, TS90 and 640 Series
Valves: EZ-Flo Plus, TPV, P-220 and 220 Brass Series ; **Controllers:** EVOLUTION ®, TMC-424E, Custom Command and TDC Series **Sensors:** TWRS Wireless RainSensor™ Series (receiver and transmitter)

Sentinel® Series Product Warranty
All Sentinel Centrals, with the exception of centrals covered by the Toro National Support Network (NSN®), and Sentinel hand-held remotes arecovered by this warranty for a period of two years from date of installation. All Sentinel Series satellites are covered by this warranty for a period of five years from date of installation.

Landscape Drip Warranty

W

DL2000™ Series Dripline
g 2 years
m 5 years (prorated)
v 7 years

Drip In® Series Dripline
g 2 years
m 5 years (prorated)

Blue Stripe® Hose
c 7 years (prorated)

Fittings
c 1 year

Emission Devices
c 1 s l g2 F
s l g® Emitter and
Drip Bubblers 2 years

Filters and Components
c 1 year

Other Accessories
c 1 year

Grounding
The Toro Warranty for Irrigation Controllers is void if controller is not properly grounded per instruction manual. A good ground source is a mandatory component of overall surge protection for Toro Irrigation Control Systems. Grounding electrode(s) should be placed at each automatic controller or controller group locations. The resistance to the grounding electrode should not exceed 10 Ohms when measured with a Megger Earth Resistance Testing instrument or equivalent. It is the responsibility of the installer to connect all electronic irrigation equipment for which he is responsible to earth ground in accordance with Article 250 of the National Electrical Code (NEC). Even with optimum grounding, neither Toro nor Toro Warranty Company are liable for product failures due to acts of God (i.e., lightning, flooding, etc.), and these failures are not covered by warranty.

GeoEngineers