



WASP® FIELD STIMULATION STANDARD OPERATING PROCEDURE

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1. PURPOSE

To clearly define the responsibilities of Blue Spark Energy Field Supervisors and/or third parties or subcontractors and communicate the procedures to be followed for all WASP® operations.

It is intended to ensure that consistent safe practices are followed which will control, reduce, or eliminate the risks associated with the task. These safe practices are intended to make the employee aware of the nature of the hazard and the steps intended to control them.

It is expected that all personnel will conduct each step in the order listed and without deviation or exception. Only properly trained and experienced personnel, who have been deemed competent based on a combination of documented training, knowledge and experience are allowed to supervise and/or take part in this task.

2. SCOPE AND APPLICATION

This Standard applies to Blue Spark Energy Inc. and all its affiliates, subsidiaries and related corporations (collectively, “Blue Spark Energy” or “Company”). This Standard shall apply to all WASP® field operations performed by Blue Spark Energy.

This Standard is managed and administered by the Operations department. Please review and consider this Standard carefully. The first line of contact for questions regarding administration of this Standard is the Employee’s Manager/ Supervisor; escalating to the Manager of the abovementioned department, who is responsible for this Standard.

3. ROLES & RESPONSIBILITIES

It is the responsibility of all Blue Spark Energy employees and third-party employees involved in WASP® operations to follow and comply with the procedures outlined in this document. In Blue Spark we pride ourselves on being a unique company, but the importance of a standardized consistent service can’t be overstated. If at any time you feel there is a better method, better way to word the message or feel the need to challenge our procedures please do so. Until your challenge is on paper the expectation is that you operate within the realm of this document.

4. GENERAL GUIDELINES

This SOP is broken into the three phases: the pre-job phase, the execution phase and the post-job phase. Blue Spark is working to expand our offering into a variety of markets and with that in mind there will come an additional component to consider for the job. OOC Operations will be planned and executed with the entire Blue Spark team. The actual job will consist of the same three phases but as we grow we will modify our procedures to match the regions where we operate.

5. WASP® FIELD OPERATIONS SOP

5.1. Pre-Job Phase

Planning our job must not be left in the hands of the Wireline provider, the client at the head office or the client/consultant in the field. We will have a limited number of tries with a new technology company so in order to get it right we must be active in ensuring a successful job.

5.1.1. Job Planning

Check for the following government specifics/requirements where the job will take place (This is not an exhaustive list but one that will evolve as our company grows):

- Type of visa if required
- Letter of intent
- Vaccinations
- Security assessment
- Environmental Concerns
- Safety Requirements
 - Meet and Greet procedure
 - Training Requirements
- Operational Requirements
- Miscellaneous – Currency, transportation, weather, language, lodging, food, water, religion, do's and don'ts and more.

5.1.2. Review the Job Details

If at any point an issue/concern arises bring it to attention of Operations Management.

Confirm the following:

- Client contact(s) for the field
- Wireline company and contact information
- Well Details
- Treatment program
- Fluid type and fluid level (fluid must be non-compressible i.e. not gas or gasified)
- Fluid Hold Up Tool (FHUT) – Should this be required be sure to review the FHUT SOP to ensure the proper setup is available (disks, standoffs, spares).
- Temperature over the treatment interval(s)
- Pressure over the treatment interval (this may be a combination of hydrostatic and reservoir/wellbore pressures)
- Deviation and Max. Dog Leg Severity (critical points)
- Minimum Restrictions in the wellbore

- Nitrogen source (>99.9995%) – This is one of the more challenging obstacles we require. N2 may be available from the client (platform) or the WL company. When sourcing N2 we must also determine the connections between the source country and our kit.
- Pricing details
- Any additional information about well performance/problems

5.1.2.1. Contact the Client and confirm the following

- Client specific safety training/orientations
- Specific PPE or monitoring systems
- Restrictions at the well site (knives, mobile phones, etc.)
- Timing of the job
- Directions to the well site/dock/heliport
 - Means of transport
 - Offshore logistics may entail a drop-off or pickup
- Wireline provider
- Type of rig on site/Rig up height
- Estimated duration of the program
- Availability of a correlation log (sales may be required to assist with this)
- Fluid level or the requirement to have to the FHUT.
 - Sales/Management will have discussed the SOP and designed the assembly to be run in the well. This may change at the wellsite.
- Any additional information about the well, lease, road etc.

5.1.2.2. Contact the Wireline provider to confirm the following

- Cable length
 - Total resistance through the system (Cable, Cable head and accessories) < 100ohms
- Cable type
- Connection from the cable to our tool. Our tool is designed to adapt to the Titan 1-11/16" cable head (Thread - 1-3/16"-12 GO pin)
- Voltage available inside the wireline unit and type of connector
- Proposed WL string complete with WASP®
 - Ensure the accessory equipment is compatible with our power requirements – 500V and 1.5A.
- Connection from our power supply to the cable
- Proper ground – The plug for the SBO and the WL unit must be grounded. Should the plug not have a ground then a wire must be run from the SBO ground to a physical ground.

NOTE: We must perform a SIT (Systems Integration Test) complete with WASP Operational Check with any new WL provider. The Operations Manager will work with the Client to ensure this is done prior to meeting at the well site.

- Blue Spark Energy will always recommend the WASP Operational Check is performed with the complete tool string with the same configuration as will be used in the well. A further recommendation will be to use the same tested string in the well whenever possible.
 - Complete the SIT checklist and SIT report when required and capture under the job in PlacePoint

5.1.3. Equipment Preparation

- Perform a visual inspection of all the equipment.
- Ensure the tools you are bringing are set up for the correct temperature environment
- Perform an operational test of all the equipment
 - All WASP® tool strings must have
 - WASP® Op Check performed. Save all files in PlacePoint under Tool Checks
 - WASP® Check List (Correct ENI document for the WASP® family)
 - All accessories/adaptors must be tested
- Confirm you have the correct equipment for the WASP® series, the environment and the work scope. Operations Admin has the latest equipment list for all tool sets.
 - WASP® Assets
 - Testing Equipment
 - Stands and Vice
 - Plugs and Printer
 - Safety kit
 - Spare Parts and Consumables
 - Hand Tools
 - Accessories – FHUT, Knuckles, Rollers, Standoffs
- Confirm you have the correct paperwork in your possession:
 - Safety training, certifications
 - Equipment certifications
 - SDS datasheets
 - The shipping of chemicals offshore/out of country will need to be confirmed with the client.
 - Vehicle inspection (Pre-Trip Vehicle Inspection Checklist),
 - Field safety meeting form (Pre-Job Hazard Assessment),
 - Job Hazard Analysis (Hazard Assessment Form)
- Perform Operations Brief
- Complete the Pre-Trip Vehicle Inspection Checklist if required
- Ensure the load is secured on truck/pallets/container

- Contact Management/Journey Management to update/register your journey
- Head out to the well location

5.2. Job Execution Phase

5.2.1. Communication

Ensure communication lines are open with the BSE team. The guidelines are as follows;

- Inform sales/mgmt. at the following milestones
 - Arrival at location/platform/rig
 - Land - Rigging up WASP or Pulsing
 - Offshore
 - 12 or 24hr Activity Update (Crew Change)
 - What was completed on the shift/day
 - Was there any deviation from the program?
 - Any changes on the well/environment
 - You can cut and paste the entry in the Op Log.
 - Did our tool perform as expected
 - What is planned for the next shift/day
 - Will there be any deviation from the program?
 - Operational Comments
 - Feel free to comment on crew changes, logistics updates (spares, failed asset swaps etc), tool performance.
 - Keep comments factual and concise
 - Land - Rigging down WASP
 - Leaving location
 - Leaving the platform/rig
 - Failures
 - We need to communicate any failures in a timely fashion. A quick email/text with basic information is sufficient from the wellsite.

5.2.2. Detailed Steps

- Upon arrival to location, contact Journey Management/Op's mgmt at 1-855-870-1997 by phone or via text to close out journey.
- Don required PPE. (PPE may be required prior to arrival at the wellsite/heliport)
- Sign in at the dog house/safety trailer, or check point at the location/facility
- Check in with Well Site Supervisor/platform Superintendent to confirm arrival and review
 - Job program (well information including PBT, fluid level, treatment intervals, tight spots)
 - Location to place equipment/spot truck.
 - Requirements around space/electrical needs to perform WASP® testing (pin checks or Op Check)

- Complete a site-specific Pre-Job Hazard Assessment which must include a thorough walk around with all Blue Spark Energy personnel on site.
- Spot truck/basket/container at a location convenient for unloading equipment but respectful of egress and other parties.
- Conduct pre-job safety meeting with all crews present at the well site using the Pre-Job Hazard Assessment form. Record any additional risk/issues on this form and have all parties sign off.
- Unload WASP® tools from truck/basket/container.



HAZARD ALERT: Exercise caution and use proper manual lifting practices. When possible request assistance from rig crew to manually carry tools to stands.

- Confirm the WASP® tool will be able to reach TD. The first WL run in the well will typically be gauge ring/junk basket (possible gamma ray/CCL) to ensure tool clearance and no debris in the well bore. If previous runs were made in the well with the same or greater diameter than the WASP® then a junk basket run is not needed. Should a client wish to make the first run in the well with the WASP® with no prior runs in the well (scraper, JB/GR etc.) *please contact your Operations Manager*. The client must be aware of the risks associated with this decision.
- Review the method for depth determination. It is the responsibility of the Wireline or Coil Tubing Company to put our tool on depth. We are not experts in their systems, cables or processes and must rely on them to correlate us. That being said we must be active in ensuring that we understand the depth correlation process and provide input on our down hole assembly.
 - We have two methods for depth correlation
 - Flagging Line
 - Use of CCL and correlation log
 - When using the CCL and correlation log it is recommended the line is flagged over the treatment interval. This will allow an easy return to depth should a CCL fail during WASP* Operations

NOTE: *The following steps will be dependent on the program. Should a GR/JB or depth determination run be performed prior to running the WASP® then much of the preparation can be done while the Wireline crew is performing this service. This SOP assumes that a GR/JB or depth determination run will occur prior to the WASP® run.*

- While the JB/GR or depth determination run is being performed record the fluid level by watching for a tension loss with the weight indicator. Record this fluid level in PlacePoint to compare with the fluid level after the WASP® run is complete.
- When the Wireline crew is depth corrected and at a satisfactory spot in the well (enough clearance not to spud the tool when depth corrected with WASP® length which means that you need at least the total length of the tool plus 1m above TD to flag the line) prepare to flag the wireline. Ensure the drums is not moving and the brake is applied. Flag the Wireline cable with electrical tape, wax crayon or chalk (@ 10 cm from the Depth Measuring Wheels to the wireline drum side) and record the corrected depth. This will be the depth of the zero point of the Wireline tool.

Record all measurements on the Line Flag Form shown in Figure 1. The completed form must be submitted as part of the job file in PlacePoint.

- If a CCL is used for depth correlation obtain a copy of the correlation log to verify the depth control procedures used on the well. This log is to be uploaded in PlacePoint.

NOTE: Should there be any discrepancies on depth you must consult with the client and also inform your operations manager of the issue.

Line Flag Procedure

Well Name: _____ Field Supervisor: _____ Date: _____
 Rig Supervisor: _____ Wireline Provider / Unit Number: _____

Legend:
 ● Zero at CCL
 ○ Zero at bottom of logging tool

Steps

1. Flag the line after correlation (you need at least the total length of the tool plus 1m above TD to flag the line)
2. Measure the distance between the zero of the tool and the bottom of the cable head (check with the wireline supervisor if the zero is located in the CCL or the bottom of their tool)
3. Measure the distance between the pulsing point in the WFRSP and the bottom of the cable head (the bottom of the cable head is always our fixed reference)
4. When BSI with the WFRSP go to the Line Flag the depth should be the same as the previous run
5. Calculate the depth correction to change the reference point to the pulsing point of the CER (Correction is obtained subtracting the Zero-Cable Head distance from the Pulsing Point-Cable Head distance)
6. Add the depth correction to the Line Flag Depth and you will have your depth adjusted to the
7. Be careful when POGH as the zero on surface will be different (amount of depth corrected deeper) this is especially important when using WJCE as you will find the Flow Tube assy earlier

Aknowledgement

BSE Field Supervisor: _____ Wireline Field Supervisor: _____ Well Site Supervisor: _____

Signature: _____ Signature: _____ Signature: _____

Figure 1. LINE FLAG FORM

- Prepare the CER. This can be done while the Wireline crew is running in with the JB/GR or when first arriving at the well site. The control fluid must have the correct conductivity value for the environment/CER type. Follow the procedures as set out in the corresponding WASP® Maintenance documents.
- Ensure SBO and laptop have been secured in the Wireline unit/truck to be connected after the Wireline crew completes their first run.

NOTE: Ensure the SBO has reached a temperature above 0 °C and below 35 deg C prior to applying power.

- Connect the SBO as per Software Standard Operating Procedures.
 - The SBO will need to have the correct plug 120V/240V to connect to an available outlet in the logging cabin. The plug must have a ground along with any adaptor, if not then an additional ground line must be connected to the SBO. Confirm the WL unit is grounded.
 - Connect the SBO to the logging cable.
 - The connections will have been discussed in the pre-job phase and potentially tested during the SIT.

- Use the BSE connection box to connect to the cable/patch panel etc. as needed
- Confirm with the Wireline Supervisor that the correct connection is being made to the Wireline slip ring/Cable to ensure none of the Wireline equipment is damaged.
- Once the Wireline crew has laid down their tool, perform a conductivity/insulation test through the cable head and confirm the WL crew has tested their accessories.
 - Insulation at 500V DC > 500MΩ
- Measure the total resistance through the system (truck, cable, accessories). Details are provided in the Software Standard Operating Procedures.
 - Resistance < 100Ω

NOTE: *The resistance of the cable can be measured with the SBO as per Software SOP or using a multimeter. The resistance must be measured through the entire system (truck, cable, accessories) to be used above the WASP®.*

- **Perform a WASP® test**
 - Voltage Setting – 500V
 - Current Setting – 1.6A
 - Perform a test with the WASP® thru the DUL as conditions warrant.
 - When possible fire the WASP through the DUL. Conditions to avoid testing the tool are;
 - Temperatures below 0 deg Celsius
 - High temperature WASP® configurations should not be tested at surface
 - If you are unable to fire the WASP thru the DUL then perform pin checks.
 - As per our WASP® Safety Manual;
 - Prior to energizing the WASP® an Operational Check must be performed on the SBO, the CUP and the PSD. These assets must pass the Op Check prior to charging the PSU's to ensure the safety devices are in working order. There are few clarifications on the validity of the Op Check below;
 - The Op Check in the form of a pin check or via the software must be done within 24hrs of rigging up.
 - The assets must be under the supervision of the field supervisor between the Op Check and rig up.
 - A Crew change will require a handover between field supervisors where the WASP Op Check ENI document or the TXT tile from the software is shared and verified.
 - If a problem is detected during the op-check proceed with troubleshooting and if needed swap out for the backup tool string. Please capture any and all information related to the failure in PlacePoint.
- Break the WASP® in sections to facilitate the rig up.
- Rig up the WASP® paying special attention to;

- Bending moments with long sections – The internal insulators of the tools are susceptible to cracks when large bending moments are placed on the tools. Where possible reduce the length of tool being lifted to not more than two sections.
- Alignment - poor alignment can damage the pins, insulators and o’rings during rig up. The 212 is more sensitive to o’ring damage so ensure you have good communication with the winch/crane operators when performing this step. Wind can wreak havoc on tool alignment so be sure to take precautions in windy conditions (safety meeting, communication and shorter sections).
 - Depending on rig up conditions it may be best to make up the WASP® horizontally in the lubricator.
- Make- up plate – Always use the makeup plate with vertical connections.
- Connections – Be sure to verify the shop and field joints are tight prior to RIH

NOTE: Pressure control is best left with the experts. It is the responsibility of the client and WL Company to handle any and all pressure control related operations. Due to the nature of the rig up with pressure control things may need to be altered or changed. Any changes to our operation must be recorded and reviewed with the operations manager.

- Zero the tool.
- RIH. Table 1 – Maximum Allowed Speed for WASP® shows recommended speeds for RIH/POOH with the WASP® tools. Clients may elect to increase the speeds while RIH/POOH. The risks associated with this must be discussed with the client prior to operating outside of the below recommendations.

MAXIMUM ALLOWED SPEEDS FOR WASP®	Maximum Speed (m/min)/(ft/hr)	
	RIH	POOH
Restrictions	20/4000	20/4000
Fluid Level	30/6000	30/6000
Perforations	30/6000	30/6000
Tubing Shoe	20/4000	20/4000
Liner Hanger	30/6000	30/6000
Clearances <10% tool OD	20/4000	20/4000
Maximum	60/12000	60/12000

Table 1. Maximum Allowed Speeds for WASP®

- If fluid level is detected while RIH, pulse 10 times in fluid to confirm the tool is operational. If fluid level is not detected, go directly to the interval.

- In higher temperature environments (greater than 50 Deg C) we need to allow sufficient time for the spark gap to warm up. The time required is dependent on fluid level, wellbore temperature and time to RIH but a maximum of 30 minutes in fluid will be sufficient.
- Run in to the starting treatment depth. When the Wireline Supervisor has run the tool in to the marking on the line (check the stretch expected in the line), he/she should run past the mark by greater than one meter and then pull back into the mark to remove any slack in the line.



HAZARD ALERT: Always check the new tool length before arriving to the mark to avoid spudding if PBDT or TD is too close.

- Put yourself on depth. Refer to the Line Flag Procedure for additional information on depth adjustment.
- Start treatment. Once on depth, move the WASP® tool to the start of the treatment interval and begin the WASP® treatment. Perform stations, number of pulses, and passes according to the program. Track pulses in the software printout or via excel.
- Once the passes are complete and the WASP® treatment is completed, Shut down the tool on the power panel.



HAZARD ALERT: To prevent a high voltage discharge, the tool MUST be shut down for 30 minutes prior to assembly/disassembly to allow the capacitors to discharge.

- POOH according to the speeds indicated in Table 1. While POOH confirm that the WL crew has alarms/measures in place to avoid an unintentional pulloff. Do not distract the WL crew close to surface unless it is for safety reasons.
- With tools at surface confirm that it is safe to start rigging down. The Wireline crew/client will have procedures in place to check for potential trapped pressure when PCE is used.
 - Confirm that the tool has been powered down for 30 min
- Rig down WASP® or perform additional runs as per the program.

NOTE: If the tool failed or any component is suspected to be failing be sure to follow the WASP® Safety Manual

- Clean the tools if possible
- Complete CER Post Job checklist.
 - When disassembling the CER be aware of potential pressure, CO2 impregnation and elevated temperatures. Wait to disassemble if either condition is present.
- Secure the tools in the basket/truck/container.
 - Use proper lifting techniques and if possible request assistance from the rig crew
- Disconnect the SBO from the Wireline truck and have the Wireline Supervisor reconnect their cables. Once again, confirm the correct connection with the Wireline Supervisor to ensure there is no damage to the Wireline equipment. Secure the power supply for transport. Ensure the area is cleared of all tools, equipment, and any other waste or trash left on the well site.
- Prepare the field ticket

- Review the field ticket with the Well Site Supervisor. Discuss with the Well Site Supervisor if there was a change in fluid level or any other change that may have occurred.
- Send signed field ticket to finance, sales and operations (one email will work).
- Contact Op's Mgmt/Journey Management (1-855-870-1997) and communicate your return journey.

5.2.3. Environmental Challenges

The WASP® family of tools is designed to operate under downhole conditions and is affected by temperature extremes. The following are known issues for the WASP® and the steps needed to mitigate service quality incidents;

- Humid environments
 - SBO will need to be stored with desiccant inside to avoid corrosion
 - Spare parts will need to be sealed from the environment (pelican case) and contain desiccant packs to avoid corrosion
- Extreme Temperatures at surface
 - In high heat the o'ring material can become very soft and susceptible to damage. Extra care must be taken when making up tool joints to avoid damage to the sealing orings.
 - The WASP® must not be powered up in environments where the temperature is below 0 degrees Celsius. The asset must be warmed up for 30 minutes in wellbore fluid or 2 hours in a shop environment prior to applying power through any of the downhole components.
 - SBO's are not to be powered up when their environment is below 0 degrees Celsius or above 35 degrees Celsius. These assets must be at a suitable temperature for the duration of the job.
- High Temperatures downhole
 - PWX's setup for high temperature environment (above 80 Deg Celsius) are currently not able to be tested at surface due to their calibration based on temperature.
- Corrosive Environments
 - The WASP® family of tools is designed to withstand lightly corrosive environments. Operations Management will determine the environments that are suitable in collaboration with clients. When the assets are run in these environments it is important that the tools are flushed/cleaned right after removal from the wellsite.
- NORMS
 - Ensure post run NORM checks are conducted by trained personnel after tools are broken out from a well with NORM contaminated scale. Tools with significant contamination should be bagged and sent onshore for decontamination as per Operator procedures.

5.3. Post-Job Procedure

5.3.1. "Paperwork"

- Ensure that the job in PlacePoint is complete and accurate. See the PPT on PlacePoint jobs for more details.
- Complete the field ticket and send to Sales, Op’s management and Finance for review.
- If a tool failed during the job, a failure report must be completed in PlacePoint Quality Central.

5.3.2. Tool Servicing

- Service the entire toolstring as per the WASP® Maintenance Instructions depending on the tool family.
- Clean the tool body
- Visually inspect the tool for mechanical damage on the housing, threaded connections and connecting pins and boxes
- Complete CER post job document

5.3.3. Complete the job package

- Signed Field Ticket posted in PlacePoint
- Line Flag Form or Correlation log posted in PlacePoint
- Pre-Trip Vehicle Inspection Checklist posted in PlacePoint
- Pre-Job Hazard Assessment posted in PlacePoint
- Any additional paperwork/notes forms from the job must be posted in PlacePoint (Hazard IDs, Observations, program notes, safety meeting minutes from other parties etc.)

6. MANAGING RECORDS KEPT ON THE BASIS OF THIS DOCUMENT

Record Name	Code	Storage			Responsibility
		Retention Time	Location	Protection	
Field Ticket	N/A	Same as Job File	PlacePoint / Job Central/ Documents/ Client Deliverables	Password Protected Document Management System	Operations Management
Line Flag Form	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Tool Checks	Password Protected Document Management System	Operations Management
Pre-Trip Vehicle Inspection Checklist	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Safety	Password Protected Document Management System	Operations Management

Pre-Job Hazard Assessment	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Safety	Password Protected Document Management System	Operations Management
WASP Op Check	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Tool Checks	Password Protected Document Management System	Operations Management
SIT Report	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Tool Checks	Password Protected Document Management System	Operations Management
Maintenance Checklists	N/A	Same as Job File	PlacePoint /Job Central/ Documents/ Tool Checks	Password Protected Document Management System	Operations Management

7. DEFINITIONS

BHP – Bottom Hole Pressure

BHT – Bottom Hole Temperature

Cablehead – WL adaptor used to connect the WASP® to the Wireline. This is supplied by the WL Company and must be confirmed by BSE prior to load out.

CER – Rigid Closed Electrode

CUP – Charging Unit with Positive polarity to be used in 400 WASP® series tool.

DLS – Dog Leg Severity, is the change in deviation in degrees per 100 ft.

FHUT – Fluid Hold Up Tool – Blue Spark asset used to maintain a fluid column over the CER.

Gauge Ring – Mechanical device used to assure free passage of any tool with smaller diameters than its size

GR/CCL – Gamma Ray-Casing Collar Locator Tool, used for correlation purposes

ID – Inner diameter.

Junk Basket – Mechanical tool used to assure free passage of the tools and to clean the well of debris. It is used prior to any Cased Hole operation to avoid tools getting stuck down hole.

OD – Outer Diameter

OOO – Out of Country, usually referring to Out of Country Operations.

PCE – Pressure Control Equipment. This can refer to lubricator, pack- off, safety valve, BOP or any variety of equipment. BSE supervisor are not the experts in Pressure Control so be sure to leave this discussion and subsequent operational decisions in the hands of the client.

PBTD – Plug Back Total Depth

Perforated Interval – Open interval in casing to allow hydrocarbons to be extracted from the formation.

PlacePoint – Operational Software used to capture Jobs, Maintenance and Quality related issues

POOH – Pull Out Of Hole. The process of retrieving the downhole tools to surface.

PPE – Personal Protective Equipment

PSD – Passive Safety Device

PSU – Parallel Storage Unit used in the WASP® tools.

PWX - Power Amplifier used in WASP® tools.

Rig Down – The process of rigging out/disconnecting the WASP® toolstring from the cable head and then breaking down the tool for service/ transport.

Rig Up – The process of connecting the components of the WASP® toolstring to the cablehead.

RIH – Run in Hole. The process of running the downhole tools into the wellbore.

SIT – Systems Integration Test. A test performed between BSE and the WL Co to ensure compatibility with the SBO and the WASP® tool

TD – Total Depth

WASP® – Wireline Applied Stimulation Pulsing

WPCE – Wellhead Pressure Control Equipment

8. REFERENCE DOCUMENTS / RELATED SOP

- Blue Spark Energy - WASP® Tool Safety Manual
- Blue Spark Energy - Line Flag Procedure
- Blue Spark Energy - WASP® Maintenance Instructions
- Blue Spark Energy - Software Standard Operating Procedures
- Systems Integration Test (complete with Checklist)
- PlacePoint Training Material

9. REVISION HISTORY

Version Number	Sections Changed	Reason for Revision	Approved by	Date
1.00		Initial Release		6/11/2012
1.01	3.7, 3.8, 5.5, 5.9, 5.11, 5.13 (add), 5.15, 5.16 (remove), 5.18 (remove), 5.21, 5.24, 5.25, 5.26, 5.27, 5.28	Procedure corrections based on site inspection and audit, April 18, 2013. Title has been amended to note geographical land-based application and all existing WASP® series.	Jesus Minakata & Todd Parker	5/15/2013
2.00	Many sections	Updated throughout	Operations	3/3/2014
3.00	Various	Updates, WASP™	Operations	3/18/2014
4.00	Section 2	Updates, WASP™ and Included a step for SGA warm up period	Operations	6/4/2014
4.01	Section 2	Updates, WASP® Scope: Blurb BSE affiliates; footer, changed the rig up procedure for WASP® 275	Operations	6/13/2014
4.02	Section 2	Op-Check modified to allow for high temp SGA	Operations	8/18/2014
5.00	Pre-Job Phase Job Execution Phase Post-Job Procedures	400 series removed, 212 series added, main format changed, new Line Flag Form added, maximum allowed speed in ft/ hr added, minor additions in Pre-Job Phase, Job Execution Phase and Post-Job Procedure sections	Operations	2/17/2016
6.00	Comprehensive Review and Update	Updated throughout	Operations	10/2/2018
6.10	5.2.3	Under bullet “Extreme Temperatures at surface” added second bullet “The WASP® ...”	Operations	10/22/18