DIMENSION BID
WELL INTERVENTION | PERFORATION SERVICES

LOGGING DESIGN & DATA DELIVERY PROCEDURE

DBSB-DCS-01

ORIGINAL ISSUE	:	01/04/2018
REVISION NO	:	00
REVISION DATE	:	-

PREPARED BY	CHECKED BY	APPROVED BY
Baby Cintami Massaugee Abdullah Log Analyst	Sheikh Muzafar Shahrizan Mustafah Chief Operating Officer	Dato' Aziz Ayob President

AMENDMENT RECORDS

This sheet will record all amendment of this procedure. All particulars of the amendments shall be stated clearly. The ISO Coordinator of Dimension Bid (M) Sdn. Bhd. (DBSB) shall be responsible for the maintenance and update of this record sheet.

CLASSIFICATION	DATE	REVISION PART	REASON/PURPOSE OF REVISION
Original Issue	01/04/2018	Establishment of Procedure	Nil

1.0 FLOW CHART

1.1 Production Logging / Well Integrity Logging

RESPONSIBILITIES	PROCEDURE	DOCUMENTATION
Operation Engineer Field Engineer in Charge	Information Gathering	CHS Form 146: Service Program Input
Field Engineer in Charge Log Analyst	Logging Design	Integrated Job Program
Field Engineer in Charge	Logging Operation	CHS-FORM-67 & CHS-FORM-68: Field Quick Look Report
Field Engineer in Charge Log Analyst	Data receiving	CHS-Form29: Data Compilation Checklist
Log Analyst	Quick Look (within 24hrs after data delivery) *NOT OK* (loop back to Data receiving) *OK*	Preliminary Report
Log Analyst	Full Analysis/Interpretation	Draft Final Report
Log Analyst	Final Package Delivery	Final Report Consignment Note

2.0 OBJECTIVE

The objectives of this document is to define the logging design and data delivery procedures for all divisions (SLS, CHS and CTS) and assign responsibilities in order to ensure consistent high quality data is delivered to our client.

These processes are intended to achieve the following results:

- **Provide guideline of general process of logging design, procedure and deliverables**
- **Consistent and high quality client deliverables**
- **Effective QC process at all stages**

3.0 SCOPE

This procedure applies to all field and support personnel that participate in the process of designing, generating, and delivering **Cased Hole Logging Products** (digital, text and hard copy) regardless of client or field.

This procedures should be used in combination with client SOPs, which contain specific client requirements.

4.0 ABBREVIATION/ DEFINITION

4.1 DB - Dimension Bid (M) Sdn Bhd

4.2 CHS - Cased Hole Services

4.3 FSM - Field Service Manager

4.4 FEIC - Field Engineer

4.5 OE – Operation Engineer

4.6 LA - Log Analyst

4.7 WMO - West Malaysia Operation

4.8 CIS - Customer Instrument Services

4.9 DLS – Dog Leg Severity

4.10 OHGR – Open Hole Gamma Ray

4.11 FQLR – Field Quick Look Report

4.12 QC – Quality Check

4.13 BHA – Bottom Hole Assembly

4.14 SSP – Specific Standard Procedure

4.15 SOE – Sequence of Events

4.16 DOR – Daily Operation Report

5.0 REFERENCE

5.1 Quality Manual

5.2 ISO 9001:2015,Para 8.5.1 Control of Production and Service Provision

6.0 DEFINITIONS AND RESPONSIBILITIES

6.1 Logging design will be pre-determine and agreed in a pre-job stages in between client and DB; verify by LA and approval of FSM.

6.2 Logging design must be consistent with client's objective meeting client's expectations. If any discrepancy between execution and planning, consult with LA and FSM for approval.

6.3 Data is delivered when it is incorporated into the client's environment such that the client can use it to make decisions. Distribution of tapes or other materials that cannot be incorporated into a client's environment is not "data delivery".

6.4 Digital data has become the CRITICAL PRODUCT. The quality of the digital product is controlled not only by its contents but also by its labeling, formatting and readability. In the same way we do not accept delivering an incomplete or inaccurate log prints, we should not accept to deliver incomplete or inaccurate digital products.

Note: The responsibility for data quality is with its producer (field).

6.5 The following procedures are to ensure we are delivering to our customers the quality data they are paying for and they will access and use again and again. It is unacceptable to deliver an incomplete or inaccurate or wrong Log Print and/or Digital Products.

6.6 Field Engineers shall ensure that:

6.6.1 Meeting Client's Engineer In-Charge and discuss on the logging objectives and sequence.

6.6.2 Understand client's specific Service Delivery Process requirement.

6.6.3 Proposed toolstring (BHA) is presented and agreed by client.

6.6.4 All necessary data require must be request prior mobilization to ensure enough time for preparation and sufficient input data for interpretation.

6.6.5 Use updated calibration file.

6.6.6 Any scale/disturbance that cause for tool malfunction downhole need to be support with evidence eg. picture of scale/sand/debris.

6.6.7 Any deviations from original logging sequence plan need to get for town approval (client and DB).

6.6.8 Communicate with Supervisor offshore and town for any tool failure and documented in Problem Report.

6.6.9 Log is properly QC'd in the field – **Refer to CHS-SOP-01 Log Quality Control**

6.6.10 No data or report is given to client without proper Quality Control by FE.

6.6.11 Data that has not been formally QC'd, shall be annotated as Field Print in the header of the log.

6.6.12 To follow client's specific procedures and unit of measurements (UOM).

6.6.13 All data must be send to town for verification after finish QC within 3 hours upon retrieving the data.

6.6.14 All digital data are backed up and secured on a CD and/or Department server eg. CHS > Job Folder > Client > Filed > Platform > Post Job > Data Compilation Checklist

6.7 Field Service Manager shall ensure that:

6.7.1 To review logging sequence and use final job program with approved logging sequence.

6.7.2 Objective of the job is properly briefed to FEIC prior mobilization or crew change.

6.7.3 Any deviations on the approved logging sequence been discussed and reviewed.

6.7.4 The Field Quick Look Report is delivered to LA within 3 hours upon FEIC completed the survey or logging.

6.7.5 The report has been reviewed and any deficiency is addressed immediately (Log Quality Control – LQC).

6.7.6 The client's specific product delivery formats are documented and followed.

6.7.7 All final data passes through the formal Data Quality Control process.

6.7.8 Any operational concern is highlighted, documented and reported to LA.

6.7.9 Digital data and hard copies of data are stored in server and archived in DVD/CD as per Data Compilation Checklist.

6.7.10 Final Report to be reviewed prior to handover to client for copies.

6.8 Log Analyst is responsible to ensure that:

6.8.1 Meeting Client's Engineer In-Charge and discuss on the logging objectives and sequence.

6.8.2 Understand client's specific Service Delivery Process requirement.

6.8.3 Any deviations on the approved logging sequence been discussed and reviewed.

6.8.4 Received a complete FLQR from FE and QC the data to ensure a good data obtained before proceed to next run.

6.8.5 The Quick Look Report is submitted to client within 24 hours upon completed the survey or logging.

6.8.6 The Field Quick Look report and raw data has been reviewed and any deficiency is addressed immediately to FE prior POOH or rig down.

6.8.7 The client's specific product delivery formats are documented and followed.

6.8.8 All final data passes through the formal Data Quality Control process.

6.8.9 The Draft Final Report is submitted to client within 7 days from the date of survey or logging completed.

6.8.10 Submitted draft report been followed up with client for discussion to finalized the result.

6.8.11 Getting a client approval prior to do any printing of hardcopies and deliveries.

6.8.12 Receipt of acknowledgement of Package Delivery – Consignment Note.

It is the responsibility of the FE, LA and FSM to closely monitor the progress of their datasets and ensure compliance to procedure.

7.0 PROCEDURE

7.1 Information gathering

7.1.1 OE and FEIC will get all necessary info required from client as per **CHS-FORM-146 Service Program Input** checklist, subject to type of logging services.

a) Acquire ***job proposal*** from client to understand client's objective and expectation on the data. This is important in order to define the ***toolstring configurations*** as which sensors are required to achieve the objectives.

b) ***Tool lift calculations*** should be made prior in designing the toolstring configurations. This is to ensure the tools deployed are having enough weight to reach to the target depth with the survey condition provided. Additional weight may be required to help the tool going down by gravity.

c) ***Survey data*** of the well is require in order to know the well trajectory, DLS, possibility of toolstring to reach target depth etc by WEST simulation.

d) Read the ***well history*** to understand more on the well behavior, restrictions, previous interventions history etc.

e) ***OHGR*** las file used for correlation purposes.

f) ***Tubing tally*** used for completion references.

g) ***Well Test Data/Production history*** is require for every survey candidate for tool lift or drag force prediction during survey in flowing condition.

h) ***PVT Input Template*** to be filled by client for PLT interpretations *(refer to CHS-Form-03 PVT Input Template).*

i) ***Gas Gun Questionnaire*** to be filled by client for Gas Gun studies by third party (TC Energy).

7.2 Logging Design

7.2.1 FE and LA will discuss on the job objective and limitation. LA will provide a logging sequence accordingly to suit the objective of the job.

7.2.2 Logging sequence will be either in **shut in/flowing/bleed off/injecting/station stop**. Depending on the requirement to meet the job objectives.

7.2.3 Standard logging comprises of a main and repeat pass and any anomalies logged, consult with town immediately for further justifications of re-log.

Note: For any Gas Gun job, PLT/Fast Gauge will serve as complimentary basis for pre & post treatment evaluation.

7.3 Logging operation

7.3.1 FE will prepare for warrior initial setup and following step by step guideline for surface preparation. Perform pre-calibration steps prior to RIH (if any) – *refer to related services of* ***Standard Operating Procedure (SOP).***

7.3.2 Once tool has been powered up and ready to RIH, QC all sensors to make sure all sensors are working. QC log throughout logging and fill up **Field Log Quality Check (inside FLQR)**. Report any tool anomaly observed to Log Analyst/FSM.

7.3.3 Follow approved logging sequence and consult with town for any anomaly or any operational concern. Get town approval for any deviation of logging program. All changes must be highlighted in preliminary report.

7.3.4 Once logging sequence has completed as per job program, proceed with post job calibration once tool in surface (if any) - refer to related services of **Standard Operating Procedure (SOP).**

7.3.5 QC the whole pass and start to produce complete Field Quick Look Report (FQLR). Refer to CHS-SOP-01 Log Quality Control. All depth reported must be corrected (tie-in) prior producing raw data for town verification.

7.4 Data Receiving

7.4.1 Once all the logging passes data are good, FE should produce Field Quick Look Report**.** FE should use latest format of Field Quick Look Report. **Please refer to CHS-FORM-67 & CHS-FORM-68.**

7.4.2 Raw data and FQLR has to be send to town immediately for verifications prior to POOH or rigdown (whichever apply).

7.4.3 FQLR, Raw Data and supporting document (as per Data Delivery Table) it can be send through Email, dropbox, google drive, or etc to LA, OE & FSM.

No	Logging Services	Document	Remarks
1	MIT / MTT	.db	*Database File*
		.smp (Temperature)	*Calibration File*
		.inc (Inclination)	
		.24F / .40F / .60F (Pre & Post Finger Calibration)	
		SOE /DOR	*Sequence of Events*
2	NTO	.db	*Database File*
		SOE / DOR	*Sequence of Events*
		Recorded THP & PCP Log	*At 0.5hr time interval*
3	CBL	.db	*Database File*
		SOE / DOR	*Sequence of Events*
4	PL / MAPS	.las	*RIH, POOH, Passes & Station Stop*
		SOE / DOR	*Sequence of Events*
		Production Well Test	
		Recorded THP & PCP Log	**For leak detection*
5	PNN / RAS	.las	*Main Pass & Repeat Pass*
		.db	*Database File*
		SOE / DOR	*Sequence of Events*
6	SBHP	.rec	*Top & Bottom Gauge*
		SOE / DOR	*Sequence of Events*
7	SGS / FGS	.las	*POOH & Each Station Stop*
		SOE / DOR	*Sequence of Events*

Table 1: Data Delivery Files

7.5 Preliminary Report

7.5.1 Once LA received all document (as per Table 1: Data Delivery Files), LA will produced Preliminary Report which will be reviewed and approved by Senior Log Analyst & Manager.

7.5.2 LA shall submit the findings to respective client within 24hrs.

7.5.3 LA need to follow up with client on the findings once client have received the report.

Note: Any disagreement on the Quick Look findings between DB & Client should be discuss further until both party satisfy and has a mutual agreement.

7.6 Full Analysis / Interpretation

7.6.1 LA will continue with full analysis with using all input data given earlier from client.

7.6.2 Refer to **Processing & Interpretation Standard Operating Procedure (SOP)** for specific tools.

7.6.3 Once completed the analysis, LA to produce Draft Final Report. Draft report has to be reviewed and approved by Senior LA & Manager.

Note: The draft report should assemble closely to the Final report format. The draft report should be submitted to client within 7 days' time (per well), from the survey done date.

7.6.4 LA/OE/FSM is responsible to discuss the result with client and finding an agreement prior to print the final report. Any revision need to be made must obtain client approval.

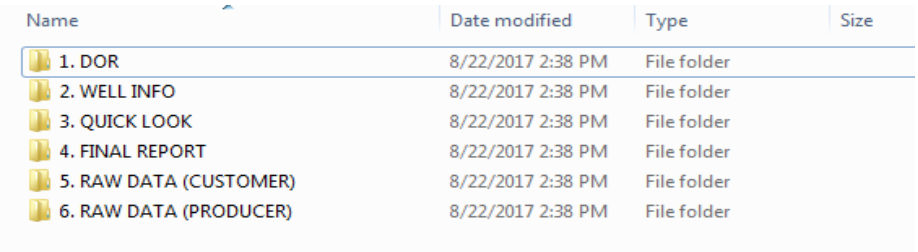
Note: Any disagreement on the Draft Full Report Analysis between DB & Client should be discuss further until both party satisfy and has a mutual agreement.

7.6.5 LA must obtain client's agreement before proceed with hardcopy printing and delivering.

7.7 Package Delivery

7.7.1 All processing data must be archive in CD/DVD and Hardcopy (Producer & Customer).

7.7.2 Below is the folder structure for the dataset arrangement inside the CD/DVD.



7.7.3 Print final report three (3) copies as standard requirement complete with 1 CD/DVD for each copy.

7.7.4 Two (2) copies will be prepared for Customer Copy and one (1) for Producer Copy.

Client Files			
Folder	**Sub Folder**	**File Description**	**Remarks**
Raw Data_Customer	Digital	i) LAS ii) Database	Processed Data
	Graphic	PDF	Final Log & Final Report
DB Files			
Folder	**Sub Folder**	**File Description**	**Remarks**
Raw Data_Producer	Digital	i) LAS ii) Database iii) Calibration Files iv) Raw Data	Processed Data WIVA WIPER, Emeraude Files
	Graphic	PDF	Final Log & Final Report
	Job Info	i) Job Program ii) OHGR iii) Survey Data iv) Production/Well Tets v) Tubing Tally vi) PVT Input	

Table 2: CD/DVD Archiving Data

7.7.5 The Client's report copies should be sending from DB office via courier service by attention to DB Operation Engineer. Consignment Note must be prepared by Log Analyst and attached together with the report shipment.

7.7.6 OE must hand carry the reports to Client's office and hand over it personally. OE must get Client signature on the Consignment note as a proof of delivery has been made. This to make sure our client receives their reports and DB have a proper tracking on report submission to client.

7.7.7 Packages Delivery must be recorded in Master File together with signed copy of Consignment Note.

8.0 QUALITY RECORDS

No.	Title of Records	Person In-Charge	Retention Period (Year)
1	CHS-FORM-146 Service Program Input	Operation Coordinator	5
2	CHS-FORM-67 Field Quick Look Report PLT / MAPS / SGS /FGS (FQLR)		
3	CHS-FORM-68 Field Quick Look Report MIT / MTT (FQLR)		
4	CHS-FORM-03 PVT Input Template		